

RURAL
WORLD

COLMAN'S RURAL WORLD

DEVOTED TO AGRICULTURE HORTICULTURE HORSES CATTLE SHEEP SWINE ETC.

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COLMAN'S RURAL WORLD.

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A BUREAU OF CATTLE STATISTICS.

Perhaps the leading topic of interest before the agricultural public to-day is that of beef supply and markets. The packing business has grown from 43 millions in 1890 to 68 millions in 1900. The recent consolidation of large packing interests, the unprecedented prices for live cattle and fresh meat, the largest crop in our history, the crisis in cattle raising which has arisen with the passing of the range, the serious consideration which farmers, for fertility sake and otherwise, are giving the feeding of small herds, are all familiar phases of the subject, the latest feature of which is the present glut in the live stock markets caused by the unwelcome and unexpected increase in the number of which are immature and unfinished.

Just why there should have been this rush of light, common and green stuff to market at this time, is not quite clear. A great deal of this stock comes from the southwest range country, where there has been a long drought, and only the usual number of fall shipments have come from the corn belt, though the proportion of unfinished stock has been large.

Feed is abundant in the whole corn belt and it is hoped that owners will hold back their immature cattle for the present and not further demoralize an already panicky market.

We believe that one of the causes of the unfortunate glut referred to is not only ignorance of market conditions generally, but a lack of information on the question of absolute supply. The visible supply is indicated by stock massed at the great centers, but no one knows what there is back of that. A decennial census of most importance, and every year there is a new sample of percentage and saw but three that were uniform, the others were made up of as many as four types in a sample of six ears.

This is not a matter of surprise when we recall the fact that the western farmer has ten times as much at stake in the corn crop as we have, but it is no credit to us that we do not pay closer attention to our corn breeding, for by doing so we could easily increase our yield 10 per cent.

AN AMERICAN NILE.

Some weeks ago there appeared on this page an editorial under the somewhat fanciful title of "A Modern Iconoclast," whose chief practical value lay in directing attention to the tremendous results accomplished by the British Government in reclaiming vast areas of the Egyptian desert by irrigation works along the River Nile.

The irrigation question in the United States is not a local, but a national issue. Even conservative New Englanders rose in the last congress and urged the passage of the Irrigation bill, for the good of the whole country. The opening up of arid lands makes new markets for domestic manufactured products, provides for the natural growth of the population and enlarges the area of food supply for the entire nation.

Mr. Arthur P. Davis, one of the best known hydrographers of the United States Geological Survey, proposes to construct great storage dams on the Colorado river, which flows through five states and empties itself in the sea, this would irrigate millions of acres, create other hundreds of thousands, establish hundreds of miles of navigation and produce electrical power worth millions of dollars. This plan has the sanction of government experts, who state that it is entirely practicable.

The cost of the entire development is around \$22,000,000. Against this is a credit of 1,500,000 acres of land, which could be irrigated, alone worth several times the cost of the project; 500 miles of navigation, said to be worth at least \$10,000,000, and immense power possibilities, worth easily \$100,000,000.

Mr. Davis calls attention to the fact that the greatest results can be achieved by concentrating and assisting the efforts of a comprehensive work, such as is practical only for the federal government. Enterprises involving from seven to ten figures are common enough in this day, and while the above is an outline of a gigantic scheme, it must be remembered that this is a giant among nations.

NOTES FROM AN OHIO FARM.

Editor RURAL WORLD: Oct. 11, 7 a. m., and the rain falls fast. Our big county fair is over; some of us attended three days; some only two and the little folks one, and we had fine weather all the time. Yesterday and a day before nearly 20,000 people passed through the gates and in all that immense crowd there were only four arrests for disorderly conduct and drunkenness. Thinking the matter over, we wonder whether the fair paid. In dollars and cents we know it did not, as perhaps 10,000 men lost a day's work represents a dollar. There is considerable corn to cut up yet and about one-half of the wheat seedling to do; the fodder will be as good as after this rain, and I would rather that all my wheat was in the ground.

We have all our fodder in shock, and only four days to seed, but the fair cost us 10 days' work lost from the farm. But we met friends we had not seen for years, we saw the finest stock that our country affords, we looked at the array of improved farm machinery, we talked over the grain exhibit and we ate some of the prize fruit, so we are satisfied and are willing to work a little harder for a few days to make up lost time.

Speaking of grain; our corn does not compare as favorably as it should with that shown in the west. Our corn is as large as the western corn, but it lacks uniformity and fineness of type. I handled every sample of percentage and saw but three that were uniform, the others were made up of as many as four types in a sample of six ears.

This is not a matter of surprise when we recall the fact that the western farmer has ten times as much at stake in the corn crop as we have, but it is no credit to us that we do not pay closer attention to our corn breeding, for by doing so we could easily increase our yield 10 per cent.

A friend from Central Ohio spent an hour with the writer among the hogs and the corn. Said he, "Your hogs are as good as ours, and your corn should be, but is not; still you have one thing in your favor, you do not have hog cholera in your section, and when I got home I do not know that half my herd has been swept away with it." If all the great corn sections of our country were as free from disease among hogs as our own, prices would fall.

peas or anything else as special crops for hog pastures.

No one ever inbreeds, but boys new makes every season. We bought three colts out of a drove of Montana horses last week; all are mares, a suckling colt, a yearling and a two-year-old, and we paid \$15, \$25 and \$40 for them. They will make horses of 1,100-1,200 pounds, and although they were wild as deer ten days ago, will now follow the boys about like dogs. The man we got them of gave the boys some advice in regard to handling them. Said he, "Boys, remember this, don't let go the rope for a few days." I thought that this might be good advice to many of us farmers. When I see a field of corn with weeds up to the ears I think the grower perhaps "let go the rope" a few days too soon when cultivating, and when I see the same field standing long after it should have been in the shock I think his grip slipped on the rope.

As a dozen of us were standing in Horticultural Hall yesterday, and I was telling of our institute work, one young fellow who married a farm said, "The farmer don't need to be preached at." I was about to make a reply when a 70-year-old veteran farmer said, "That is just what he does need, John. Why, I know land that is now worn out that might still be producing 75 bushels of corn per acre had its owner been preached at 50 years ago. This agricultural education was begun forty years too late to save many farms in our country, but it may and will be the means of saving farms in the newer countries."

RURAL WORLD friends, that talk from that old man was worth \$10 to each man who heard it, and a little while ago I said that I wondered "whether the fair paid or not." Yes, it paid; and it paid well, for there were dozens of meetings, just like the one I mentioned, and they will all bear fruit. C. D. LYON, Higginsport, Ohio.

THE GOOD ROADS QUESTION.

Editor RURAL WORLD: I read with much interest the communication in the RURAL WORLD of October 3 from J. Y. Powell on "National Highways." Neither the "Public Roads" nor the "National Highways" are a new thing, but the higher opinion of the importance of good country roads than myself. There are two points in the letter referred to, however, which strike me as being untenable, both in theory and practice.

The first is the assumption of the superiority of merely utilitarian enterprises over those which, to the casual mind, appear to be aesthetic and temporary. The influence of an International Exposition of the magnitude of the Columbian quadri-centennial at Chicago in 1893, or the St. Louis commemoration of the Louisiana Purchase to be held in 1904, can not be calculated in dollars or miles of roads. A World's Fair of this order is not a circus, but a school. It is not a picnic, but an education. It seems a waste of words to dwell on the fact that from its very plan of presenting in attractive form the history, methods, processes and products of progress it is in the highest degree a practical education for millions of our countrymen impossible of consumption in any other way.

The spirit of materialism which deprecates anything not entirely "practical" or utilitarian, no matter how it may appeal to man's sense of the beautiful, is to be deplored. "Give me the luxuries of life and I will do without the necessities" is a saying which illustrates the power of the artistic soul and the love of beauty over the gross animalism of physical man.

Of the second proposition that a paternal government should build country roads instead of making appropriations for exhibitions, I wish to state that the United States government could well afford to charge up all such appropriations to "advertising account," and consider that both the national government and the people whom it stands for get the full benefit of the expenditure, if not, indeed, a bargain. Not to state that the practice of educating foreign nations and particularly of what is called the "American Invasion" of Europe by our surplus products, is due to the fact that less than ten years ago the most magnificent display of American enterprise and resources, raw and manufactured products, attracted the attention of European nations in a way that no amount of printer's ink and personal solicitation could have accomplished. We showed them not what we would do, but what we could do.

In the second place, while no change in the constitution has occurred, a great change has come to the country by the advent of steam roads, to which our government has transferred its fostering care in land grants and concessions, and the necessity for a "national highway" has thus ceased to exist. The good-roads question is now a local, not a national one. With a network of roads covering the whole land, the matter of suitable farm roads is one that interests those who travel them. The federal government might as well build the sidewalks of our provincial villages as to spend one dollar on the wagon roads which they border.

Besides the clearly accepted opinion that it is no longer the province of our local matters, there is the further argument that only by individual effort or the concerted effort of a community with like interests, can any man or group of men hope to enjoy the benefits of improved conditions. If roads are bad and farmers find it difficult in certain seasons to haul produce to market and villages and cities find it difficult to get quickly

and cheaply the country products upon which they depend and for which they exchange their manufactured wares, let the community thus affected get together either by county or township action and make the roads good. The enhanced value of farm property alone will repay such expenditure. It is only when we work for an end, not when it is given to us that we really appreciate its blessing.

Such proposals as that of national highways, like the subterranean and government granary schemes of well-meaning, but visionary persons come from a misconception of the true purpose of a government. A republican form of government, such as ours, involving the beautiful scheme of state sovereignty, which now means home rule on local questions, is essentially and properly a federation for self protection. The idea of militant

wide by 50 miles long, fronting on Lake Ontario, with only enough elevation above the lake to give it drainage. It is a uniform, rich and prosperous looking section, very closely cultivated, with very little waste or timber lands. The heavy plastic nature of the soil makes cultivation difficult, and results more problematical.

On the west and north of this lake level district and overlooking it at an elevation of about six hundred feet is the continuation of the Niagara limestone bluff, which circles around the city of Hamilton and forms what local residents call the mountain. This upland district, running north to Toronto on Lake Ontario, and for 200 miles west to London in the west end of the province, and probably fifty miles wide, covers the best general farming district of Ontario. The underlying



N. H. GENTRY, President Missouri State Fair Association, and one of the Leading Breeders of Shorthorn Cattle and Berkshire Hogs in the State.

protection has grown to include any matter of national or general importance whose concerted action in stupendous schemes would not only benefit all the nation, but where through lack of capital or unity of purpose private enterprise would fail.

The plan I have to propose for the furthering of the good-roads movement is this: All roads lead to Rome. In every county each town is a center, from which radiate the highways and by-ways—the arteries of travel to the heart of the community.

These centers are as interested in smooth, hard, permanent approaches to their markets as the rural members, and from the hub, the made-roads should begin. A mile in each direction at first, and gradually extended—it will surprise the uninitiated how rapidly the country contingent will "catch on" to the ends of these rays and extend them so that finally they meet the spokes of a neighboring hub, and thus do they knit together in mutuality of interest a whole country.

This process is the natural one, and has been going on for years in many localities.

So far as my experience and observation go the narrow stone road with the fair weather side track is the most satisfactory, and in the end the cheapest.

HENRY A. BROWN, Henry Co., Iowa.

MISSOURIAN IN CANADA.

Editor RURAL WORLD: A brief sojourn in Southern and Western Ontario affords me an excuse for adding a few remarks on the general agricultural conditions of that section, as compared with the districts of the U. S. A. previously referred to.

Entering this section of country from Niagara or Buffalo, New York state, the soil and method of farming from the base of the Niagara limestone bluffs eastward to Lake Ontario and from Niagara to the northward beyond Hamilton, Ontario, is a comparatively level tract of heavy clay soil, very largely devoted to the orchard business. A local district around St. Catharines, about the center of the section, is almost continuous and solid apple orchard, and this section of the crop is apparently an average one. There is some little corn grown, which is now mostly in the shock. The soil is uniformly plowed in narrow lands for drainage purposes. The farms are all enclosed with fences and are subdivided into fields of from 10 to 40 acres. The cultivation is neat and rotation of crops evidently receives careful attention. A considerable breadth of wheat has been planted, and is already above ground. The variety of cattle raised is almost uniformly high-grade Short-horn; pastures look fresh and stock are still in the fields. Clover grows luxuriantly and quite a breadth of it is now being harvested for seed—evidently the second cutting. This section is probably 20 miles

upland belt from London, in the west, to Toronto, on Lake Ontario, the case is different. The cultivation is not so uniform, because the soil is more variable than the Lake Erie lowlands, and dairy farming largely predominates in that section; cheese factories, creameries and some milk condensing plants being located at convenient intervals. Among the dairy cattle Holstein grades prevail, but there are numerous Jersey herds, a few Ayrshires and other mixed dairy breeds.

In the beef breeds Shorthorns predominate, but there are also a scattering of Poled Angus and Herefords, with a variety of grades of all of these breeds, but the scrub so common in "Grand Old Missouri" are here conspicuous by their absence. The rivalry is very keen among the farmers in the breeding up of their cattle, both for dairy and beef purposes. The dairy business the general purpose cow is frequently in evidence, the farmer being anxious to raise beef and at the same time utilize the nearest cheese factory for his surplus milk. Calves are largely raised by hand, with this object in view, and very frequently with results not altogether satisfactory from a beef point of view.

Corn is raised on this elevated plateau only to limited extent, and whenever raised is very carefully shocked or housed.

Quite a breadth of "rutabagas" or Swedish turnips, are grown, and some mangold wurstels or beets to replace corn as cattle feed. All of Ontario grows much of the crop of red clover, and clover hay is universal and always stored in barns. Many farms are below 100 acres and very few exceed 200 acres in extent. The finest soil and largest breadth of good farming land in this section is in the Toronto district, which is exclusively occupied by the Scotch and their descendants. For excellence of cultivation, intelligence displayed in rotating crops, and in the application of chemical fertilizers and breeding and feeding of live stock there are few sections of Scotland can excel this particular locality.

Speaking generally, I did not admire the breed of horses I saw; they are further behind in this respect than in any other I noticed. Hogs are not largely raised. I saw quite a number of Berkshire and also many white hogs of apparently a uniform breed, that I thought inferior in appearance to the Berkshire, but I presume they have merit, or else they would not be so extensively raised.

The district west of London, between Lake St. Clair and Lake Erie, and facing on the St. Clair or Detroit river, is flat and very much water-logged; on that account largely in pasture, and, strictly speaking, is a poor farming and unhealthy country, although rich soil.

From a collective point of view, the farming population of Ontario is a very hard-working, painstaking class of people. Rotation of crops, largely on Scotch methods, is universal. The improvements lack the neat, natty appearance of the Yankees, but have an air of comfort and prosperity based on rich soil and bountiful crops, which it is impossible for the rock-ribbed hills of New England to produce. Neither are the cultured manners, smooth, classical English, baked beans or inhospitality of New England to be found.

But in place of these you are frequently greeted in the broad Doric accent with hearty welcome, and an equally hearty welcome which you can enjoy to your heart's content with the full assurance from the surroundings that they have plenty left.

The lands are laid out in sections, one and a quarter miles square on the rectangular system, same as in the western states, so that a road is called for every one and a quarter miles. The main roads are usually good, as rock and gravel are abundant; the by-roads are miserable.

This is an old settled district, the rising generation is largely going west on the Canadian side of the line to Manitoba and the Northwest provinces, and the younger sons of a very prolific population are unwilling left behind to succeed the fathers on their farms—very often unwillingly. They are being much better educated than their fathers were—educational facilities are excellent. The farming population as a body are intensely loyal and patriotic to the mother country, and any idea of annexation to this country is indignantly scoffed at. There are no openings for Irish policemen or street-car conductors. The people are slow and conservative in their methods and economical in their habits.

The dull, sleepy city of Windsor, on the Canadian side, opposite the live, aggressive, hustling city of Detroit, on the American side of the line, are fairly typical of the commercial conditions existing in the two countries on a comparative basis. Western farmers could profitably learn much from their Canadian neighbors, who have had to wring success from primary conditions, which would be appalling to a prairie farmer.

Leaving Detroit coming south on the Wabash to Adrian, Mich., the train runs over a very smooth farming district of rich soil, with immense crops of corn, all in the shock, rich pastures and clover fields. A large acreage of wheat planted and just showing green over the soil, with everything well on to be shape for winter. The cattle are not so numerous in the pasture as in Canada, neither are they of the same uniform grade, but it has the old familiar appearance as on the other roads leaving St. Louis, which I have recently traveled over and written about. Darkness has set in and I will now say good night. THOMAS LAWSON, October 12.

NEWS AND COMMENT.

A bill for penny postage will be urged in the next session of Congress, and it is likely to pass. This will interest the farming community, and with rural routes will tend to increase the amount of first-class mail matter to a very large extent.

A comprehensive article on "Uses of Corn," by Prof. Harker, appearing on the second page of this issue, will make interesting reading for every farmer. Judging from the many domains which this wonderful product has invaded, corn is no longer King, but Emperor.

Mutton is scarce, owing to the long-continued drought in Australia, where Great Britain has procured most of its supply. A big English dealer is in this country, and says the supply is not equal to the demand. Sheep raising has fallen in the United States, but the stimulus of a new foreign demand may bring it up to the place it should occupy.

Interest on cattle paper in Iowa has advanced about one per cent since the tightness of money began and rates are now seven and eight per cent, and bankers say it will go higher. It would be unkind to suggest that the apathy of the money changers in meeting Secretary Shaw's suggestions, was inspired by the prospect of usurious gains.

There are said to be 500 varieties of weeds and grasses growing on our western plains, of which horses will eat some 25, cattle 57 and sheep about 125; goats will not only eat all of the 500, including loco weed and sage brush, but they will eat the whole plant root and branch. An educated goat on a weedy farm would be a fine thing for a lazy man.

The greatest parade that has ever been witnessed by the Grand Army of the Republic took place Oct. 5, at Washington. No more inspiring sight could greet the eyes of a patriot than the ranks of gray-headed veterans in blue marching up Pennsylvania avenue, recalling the famous marshalling of the troops in '65 at the Capital City. We hope to hear from Brother Gillespie.

We cannot refrain from calling attention to the coincidence of the unity of opinion on the subject of fairs and expositions shown in the correspondence of Mr. C. D. Lyon and Mr. Henry A. Brown appearing on this page. These are the broad-minded views of successful farmers who attribute their success to getting out of the rut of conservatism and relying on the smooth, hard road of large ideas and individual development.

It does seem that Secretary Shaw has done his duty to relieve the money stringency, which still exists to some extent. He has offered to buy bonds of the money changers, and has suggested their purchase; the holders of government securities have not taken kindly to the offer to buy, nor have the national banks shown any enthusiasm in the government's suggestion of issuing bank currency with the purchase of government bonds as its basis. Some form of negotiable exchange should be provided for emergencies.

The difference between St. Louis and other large municipalities is that the former is making heroic efforts to purge itself of iniquitous officials, while this far in Chicago, Philadelphia, Boston and New York no Daniel has come to judgment with the courage and ability of Joseph W. Folk. No one who reads the daily papers published in those cities, or who knows aught of their municipal affairs doubts their rottenness, which is only hidden. St. Louis may stir up a awful smell, but it is at least an honest effort at purification, and the city itself stands a good chance to become in reality a city beautiful.

With the passing events of current history, the passing of tribal government among the American Indians is worthy of note. There are still 240,000 noble Red men, including squaws and paposes, in the United States, and the work of allotment of lands to heads of families begun some months ago, will soon become an accomplished fact. Within a few months, at least two-thirds of the Indians will be wards of the nation no longer—but will hold a title to a plot of good grazing and tillable land. The "five nations"—Cherokees, Creeks, Seminole, Choctaws and Chickasaws—being the most intelligent and advanced tribes in the country, were the first to abolish the tribal form of government and take their place as citizens of our commonwealth.

Prof. W. M. Hays of the Minnesota Station has been placed in charge of the new movement to introduce agriculture into the rural schools. A bulletin, nearing completion will contain 30 exercises and experiments. This bulletin is to be bound and furnished to each rural school. It outlines exercises which the teacher is to require of pupils at such times as may be convenient and practicable. Each exercise includes four divisions. Under the first heading is a statement of the object sought; under the second the materials to be used; under the third the plan of work and under the fourth are notes giving important facts to the teacher. The subjects include agriculture, horticulture, zoology, domestic science, home economics, dairying, etc. The state department of public instruction employed three men to introduce these exercises in the teachers' summer schools throughout the state. Reading lessons, charts and other helps to teaching agriculture in the rural schools are contemplated.

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OCT 18 1902
SMITHSONIAN DEPOSIT

The Dairy

THE DAIRY CONVENTION.

In union there is strength. Let every dairy farmer and every creamery man attend the 18th annual meeting of the Missouri State Dairy Association on Nov. 11, 12 and 13, and the united effort of such a body would not only reveal strength of union, but such concerted effort works backward. Each man belonging to the association is strengthened as a unit. He gains valuable information about feeding, markets, methods of hauling, etc., which would require years of book study. Above all, the progressive dairyman receives inspiration and enthusiasm at these meetings which can not be measured in cold cash. The farmer needs to get out of a rut, and the tendency to get in a rut is common. A good way to wake the solar plexus is to get away from the routine of daily work for a few days. Take a vacation. Sunday is a grand institution—a man can do more work in six days than he can in seven, and he can do more and better work for having enjoyed a change of nerve ganglia by taking an annual outing. Nothing to dairymen offers such a happy combination of business and pleasure as the convention. It's worth the price of admission just for the fun. Go to Columbia and see the new State Dairy building; see all the other buildings of the agricultural college; see the model farm of the Experiment Station. See all the rest of the men in this state who are interested in dairy work. Hear the speeches and talks on practical subjects by men who have proved what they talk about. Ask your questions and get light on dark points.

THE FABLE OF THE RED COW AND THE FIERCE MAN.

Editor RURAL WORLD: There was once an old Red Cow, with a long neck and twisted horns, who was noted for the great quantities of milk she gave. There was also a freckle-faced, long-legged boy who milked the cow and who was noted for his kind treatment of her. One day this boy left the farm and went on a visit to the city, and a hired man, with a loud voice and a big foot, came to milk the cow. She noted him for the kind treatment he did not give her. If she switched her tail or moved her foot or shook her ears he punched her in the side or jumped up and kicked her, yelling at her so fiercely the calves thought him insane.

She stood this as best she could for several days; but she could not help longing for the good old times when she was petted and praised instead of kicked and cursed. At last one evening she lost her temper completely. She was looking for a milkman cut across the face with her tail and slammed her foot into the pail. He jumped off the stool and wiped the milk out of his eyes so he could see how to kick her properly; but she kicked first. She took him on the shin, and he doubled up and roared. Then she stepped on his toe with the corn on it, and while he was trying to beat her off, suddenly gave him a side kick on the other knee. He hobbled away to the house, but she was not yet satisfied.

Next morning he hung his coat on the fence, and she saw it and chewed it into pulp. He ran at her, leaving the gate open as he did so, and she dashed out of it and down the road, at a 230 gait, while he ran after her, saying all manner of evil about cows generally. By the time he got her back he was not able to kick her.

Next day the freckle-faced boy came home, and they were both happy, and all was well once more. Still, the cow and the hired man never became friends.

Moral.—If you are going to kick be quick about it. E. E. MILLER.

Hamblen Co., Tenn.

THE DUAL PURPOSE COW.

Though many attempts have been made to develop a breed of cattle profitable for both beef and milk, success in that direction has not yet been reached, and it seems more than probable that such a breed will never be secured. It is the natural tendency of every cow to use her surplus food either in growth and the accumulation of fat or in the production of milk. Either of these tendencies may be greatly strengthened by intelligent breeding and selection, but no breed has ever been developed which excels in both beef and butter making qualities, and improvement in either direction has usually been accompanied by a corresponding loss in the other. It is true that there are some breeds which make animals of fair size and which are also fair dairy animals, but they are only fair as either. The best beef animals and the best milking animals have never been found in the same individuals or even in the same breed, and the cattle raiser who attempts to raise beef for a living and at the same time to make money by using his cows in a dairy is almost sure to find one branch of his business unprofitable. A profitable beef animal is one thing, while a profitable dairy cow is something quite different. The man who expects to make his living from a dairy should select the breed which will give him the greatest amount of butter and milk from the smallest number of animals at the least cost.—H. E. Alvord.

There is no reason why butter fat cannot be removed from milk and yet young calves be made to thrive exceedingly well on the skim milk, supplemented by hay and grain.

Old as the Pyramids

And as little changed by the ages, is Scrofula, than which no disease, save Consumption, is responsible for a larger mortality, and Consumption is its outgrowth.

It affects the glands, the mucous membranes, tissues and bones; causes lumps in the neck, catarrhal troubles, rickets, inflamed eyelids, sore ears, cutaneous eruptions, etc.

"I suffered from scrofula, the disease affecting the glands of my neck. I did everything I was told to do to eradicate it, but without success. I then began taking Hood's Sarsaparilla, and the swelling in my neck entirely disappeared and my skin resumed a smooth, healthy appearance. The cure was complete." Miss ANITA MITCHELL, 915 Scott St., Covington, Ky.

Hood's Sarsaparilla and Pills

Thoroughly eradicate scrofula and build up the system that has suffered from it.

USES OF CORN.

The average farm boy thinks the product of his long labor in the hot summer days means only feed for cattle and hogs, writes Prof. Haecker, in "Dairy Record." But it would be hard to convince these lads that they are growing grain that may find its way into whiskey, beer, oil, sugar, rubber, mullage, gum drops, wall paper, soap, ink, salad dressing, calico or a dozen other materials. It is hardly a matter of twenty years since corn began to find its way into these products to a large extent. Sixty years ago it was fed only in the grain for the animals, and ground for men to eat or drink. Starch made from corn was unknown. Thomas Kingsford, an Englishman, transplanted in New Jersey soil, was making starch from wheat seventy years ago in Kingsford's factory in New Bergen, and when he suggested taking the starch from maize he was discouraged and even ridiculed. It was in 1842 that he solved the problem and brought from corn its first



PRESS BUILDING, WORLD'S FAIR, ST. LOUIS, 1904.

by-product aside from whiskey and meal. Now practically all the starch made in the United States is from Indian corn. It was nearly forty years after Kingsford's discovery that the great family of derivatives was born, and every day chemists are working on the little kernels, digging for new sources of wealth.

There are four parts to a kernel of corn—the outer covering, the hull or bran; then the hard, flinty or glutinous part; then the starch; and last the little white part which extends through the tip and is called the germ. Of the four parts the germ, about the size of the wheat kernel, is the most interesting, and when its weight is considered, the most valuable. Its history is like that of the cotton seed, for only a few years ago it was looked upon as a nuisance, and the starch and glucose manufacturers spent money to get rid of it. Machines cracked each grain, the mass was given a bath and the grain germ floated out, while the starch, bran and outer covering remained behind. After the chemists found an oil worth more than any other constituent of Indian corn, the waste ceased. Now the germs are put under hydraulic pressure of something like two tons to the square inch and the oil is squeezed out of them. The little coats of fiber left become oil cake and go back to the cattle.

For a barrel of 56 pounds the manufacturer in Chicago gets about \$2.50, or 6 cents a pound—nice price for what was thrown away a few years ago.

On my table is a block, apparently of rubber, the shape and size of a building brick. It has all the outward characteristics of India rubber, even to the odor. It is a dollar a pound. The corn oil product, probably grown in Kansas or Iowa, for it was made from corn oil. The oil has undergone a sulphur treatment and a baking, and the rubber substitute results. The main point in favor of corn rubber is that it can be sold for about one-tenth the price of Para rubber, which costs about a dollar a pound. The corn oil product lacks the tensile elasticity of the Para rubber; that is, it will not stretch and resume its original form as the natural rubber does. When it comes to compression, however, it seems to possess the qualities of the natural rubber.

The principal constituent of corn is starch. To extract that, the shelled corn is placed in vats, about a thousand bushels of corn to 8,000 gallons of water. In the water is a very small proportion of sulphurous acid used to bleach or whiten the grain and loosen the hull and germ. After 30 or 40 hours, the soaked corn is run through a coarse grinding mill along with the water. This loosens the germ and much of the hull, which float with the water. The gluten and starch are then ground very fine in connection with more water and pass out of the mill over silk bolting cloths. The water carries the starch and gluten through the cloths, the hulls and refuse passing over. This water, with its mixture of starch and gluten, passes through a series of long shallow troughs. The starch being heavier gradually settles to the bottom in a solid mass in the troughs. When a trough is full the current is diverted elsewhere, and the trough of starch goes into the drying room. The starch is now in solid form, and after the last water is dried out the product is ready for the market.

In that state it may be used in the laundry, brewery or confectionery, or sold in the same can with baking powder. But it stands a good chance of staying in the factory and undergoing changes that will make it grape sugar, glucose or dextrine. Dextrine are gums. To make of starch a substitute for gum arabic, it is treated with nitric acid, and then baked. As dextrine the starch fixes dyes and colors on fabrics, particularly calico, and also may be used in paper boxes, oil cloth, ink, wall paper, for gumming envelopes and stamps or wherever strong, adhesive paste is required. Confectioners use it as a substitute for natural gums and in preparation of surgical bandages.

Glucose and grape sugar are the greatest single derivatives of corn starch. Thirty years ago practically no glucose was produced in the United States, and now the exports amount to eight or nine million dollars a year, and the foreign products made of rice, wheat, potato and sago starches can't compete at home with the American corn glucose.

A hundred years ago two German chemists found sugar in the grape, and a few years later a Russian found it in starch, and, moreover, found starch sugar to be identical with grape sugar. To make glucose or grape sugar the starch is treated with muriatic acid, under pressure, the acid is neutralized by carbonate of soda. The acid is affixed to the sodium, forming common salt, and every trace of the carbonic acid remaining is carried off. By

varying temperature, pressure and degree of acidity a variety of sugars can be produced. When the acid treatment or "conversion" is carried to the farthest, grape sugar is produced. When the action is less complete, a thick, colorless syrup, called glucose, is produced. To make a table syrup of glucose, 10 per cent of cane sugar, sorghum or molasses is added to give it the desired color and flavor. The grape sugar taken from starch does not resemble cane sugar, for the large amount of water in the corn product prevents crystallization or granulation. There was wild excitement in sugar in 1880 when a chemist extracted a water-free sugar from corn starch. It had the appearance of the granulated product from cane, and after mixing it with the cane sugar, the whole could be sold at a price much lower than the old style sugar. New fortunes were in sight, and in Chicago a great factory was soon in operation. Thousands of barrels of corn sugar, mixed with the Louisiana product, were rushed into the market, but soon they were coming back. Buyers said it in no way resembled the standard granulated sugar. When a barrel was opened it was found to contain one solid lump of sugar. The manufacturers had overlooked something in their hunt for money—the water-free corn sugar absorbed the moisture in the cane sugar and the whole combined and hardened. All the efforts to overcome the defect failed and the new factories became idle. Now about all the water-free sugar made is used in the manufacture of beer and wine.

With the main body of starch and the germ of the kernel used, the hull, or bran, and gluten are left. The gluten is dried in press and in its dry state about one-third of it is starch, which the chemists are unable to extract. As gluten meal it is fed to cattle, and mixed with bran it becomes gluten feed. In all, about forty derivatives or by-products are made from the kernel of corn.

TO AVOID BAD ODORS IN MILK.

Over most sections of the country there has been an abundance of rain the greater part of the summer, and the result is there is a luxuriant growth of weeds, which means that there is no end to the different flavors in milk, says a writer in "New York Farmer." It is impossible for the cow to sort out and reject all this undesirable trash, hence there is more or less bad flavor imparted to the milk by these rank flavored herbs.

Cows are inclined to eat fresh green vegetation for variety, and as these weeds have peculiar flavoring oils, which can not help but taint the milk, the dairy products, which are in other ways well made, are cut down in price, simply because of the bad flavor. We can not lay all these objectionable flavors to weeds and wild stuffs.

Many of these off-flavors of dairy products may be traced to badly cared for dairy apparatus. Milk absorbs odors very readily and any dirt or old milk that is allowed to remain in the utensils is sure to make trouble.

How easy it is to wash a can or pail with a rag and some lukewarm water, and leave some milk sticking in the seams! And the longer it remains there the tighter it sticks. Then it is only a matter of a few days when this stuff becomes rotten and of a very disagreeable smell, which means a bad flavor to the milk and all its products.

Then comes dirty and bad smelling places, which cause trouble with the milk. Hops along side of the dairy house, old sour milk and whey, and rooms over basements which are foul with decaying dairy refuse, all are fruitful of sources of ill-tasting milk.

That the dairyman may meet the strong competition which faces him on every side, he must adopt more thorough methods in the handling and care of the valuable product. It seems that there are comparatively few farmers who realize how expensive this ignorance, carelessness and don't care-a-damn-ness are to them in the dairy business. The foul stuff can be kept out of the pasture. Fodder and grain may be fed, which will not taint milk. With corn and silage as fodder it is impossible to keep stables and milking sheds clean and free of bad odors. It is not necessary to bring sour milk or whey in the cans used for sweet milk. Other cans may be procured for this purpose. Some scrub-brush, a little sal-soda, or perhaps better, a good washing powder, will, with some "elbow grease," keep all the dairy apparatus clean.

To-day there are inventions on the market for straining, aerating and cooling milk in the most complete manner, and these utensils cost but little money. To insure a good article they should be used in every dairy. It is only the best that finds quick sale and continuous demand.

MILK FILTERS NOT PRACTICABLE.

A bulletin of the Cornell Station says: While milk drawn under ordinary conditions becomes polluted with varying amounts of dirt and dust, milk obtained even with the most careful precautions will contain some foreign matter, which is teeming with germ life. These impurities, consisting mostly of dirt and dust, dissolve readily in the warm milk, therefore, if the latter is not strained promptly little if any of the filth can be strained out. It is then of the greatest importance to reduce the time that elapses between the drawing and straining of milk to a minimum; even then it has been found that about one-half of the impurities that would reach the milk reaches the strainer. Attempts have been made to use strainers or filters that would filter out bacteria and thus reduce the number of bacteria in milk directly. For this purpose, absorbent cotton, paper filters, cellulose, gravel or sand filters, porcelain filters and many other devices have been tested and used with more or less success. In order to thoroughly understand the value of these filters in connection with dairymen it is well for the dairymen to know that the bacteria are many times smaller than the fat globules in milk. Straining the milk in mind it is not difficult to understand that as soon as we make use of a filter that is dense enough to prevent bacteria from penetrating, the fat globules will also be filtered out. A large number of the experiments conducted at this station and elsewhere have proved the correctness of this statement. The fact that the use of filters capable of depriving milk of one of its most valuable constituents, namely, fat, and that such a process of filtering is exceedingly slow and therefore impracticable in dairymen, demonstrates clearly the impossibility of purifying milk bacteriologically by means of any filter now on the market.

If You Have a Sick Friend Let Me Know It.

As an act of humanity, write me a postal card, telling which book to send. Then I will gladly do this:

I will send the sick one an order—good at any drug store—for six bottles Dr. Shoop's Restorative. He may use it a month at my risk to learn what it can do. If it succeeds, the cost is \$5.50. If it fails, I will pay the druggist myself.

Not a penny will be asked or accepted in any case that my remedy can't cure. There are such cases—rare ones, where the trouble results from an incurable cause, like cancer. But my records show that 99 out of each 100 who try these six bottles get well—and pay gladly. These remarkable results make this offer possible.

My success comes from strengthening the inside nerves. I don't treat the organs, for chronic diseases never were cured in that way. I bring back the nerve power which alone operates the vital organs. They do their duty when they have the power to act.

My books explain all. Tell me a friend who needs one.

Simply state which book you want, and address Dr. Shoop, Box 555, Racine, Wis.

Mild cases, not chronic, are often cured by one or two bottles. At all druggists.

THE DAIRY COW AS A FOOD PRODUCER.

Probably no animal on the farm utilizes its food so completely in the work of production as the dairy cow. In manufacturing the economy of a machine is judged by the proportion of work to total energy expended. This rule may be applied in judging of the relative economy of farm animals as producers of food materials. A cow producing a moderate yield of milk will require about the same food as a steer being stall fattened. "Orange Juice Farmer" states that Laves and Gilbert of England have shown by elaborate experiments that a cow yielding ten quarts of milk per day will produce in her milk weekly 6.6 pounds of nitrogenous substance, 4.3 pounds of fat, 4.3 pounds of milk sugar and 1.3 pounds of mineral matter, making 22.5 pounds of total food materials.

A steer gaining 15 pounds per week will produce in the increase made 11 pounds nitrogenous substance, 9.5 pounds of fat and 2.3 pounds of mineral matter, or 22.8 pounds total food material. In other words, in a given time, the cow produces in her milk about twice as much food materials as the steer stores on his body. According to these figures the solids of milk differ from those of beef by being far more nitrogenous, and thus more valuable as food. With milk at 3 cents per quart and beef at 7 cents per pound, the market value per pound of the solids of the two classes of products is about the same. When milk sells at a relatively high price than this the increased economy of the dairy cow, as compared with the beef animal becomes still more apparent.

FEMININE DAIRY WISDOM.

Don't let the cows shrink in the first of the pasture shortage, or you will be a serious loser, writes Dorothy Tucker in "Farm Journal," with several other sage "don'ts."

Don't let the cows drink from a stagnant pool. If you have one in the pasture, fence it off and give them only sweet, pure water if you wish your milk or butter to bring a paying price.

The milk from one herd drinking from a stagnant pool spoiled the product of a large creamery.

The cows that are due to calve should be kept in out of the hot sun and fed dry feed for a time. You cannot give them too much attention at this time. Any carelessness will result in loss.

Don't put the calves in a pig pasture unless you wish to raise runts. They will grow much better kept in a cool stable with the windows slightly darkened to keep out the flies. Their skins are thin and the hot sun burns them, and the flies exhaust them.

The flies? A little figuring will answer that question for each one of us. Spray your cows? Don't believe in it! Folks never used to do it? But can we afford to make this mistake because our grandfathers did? Then, too, they never knew anything about the Texas cattle fly. They have come on since. Just try it one season and see if it will not pay you big returns.

Do not get the can of milk down cellar of hot heat to save it from the heat. I have tried that to my sorrow. Milk will spoil down cellar much quicker than if kept where the air can circulate about it.

THE FACTORY AND THE PRIVATE DAIRYMAN.

"The purpose of this bulletin, and the object of the work begun under the act of the last legislature," we quote from "Dairy Husbandry," Bulletin 56 of the Missouri Station, "is, not especially the establishment of factors for making butter or cheese. A factory built in a section where it will not be supported by the people, is an injury to the community and to the development of the dairy industry. A factory should never be built until support is assured and a sufficient supply of milk guaranteed. For a large part of the state the skimming station and hand separator will continue to be the best system for some time to come."

"Private dairymen, meaning by this the making of first-class butter and cheese on the farm by modern methods, or the sale of milk for the city trade, will continue to be profitable enterprises if carried on with intelligence and skill. The largest returns per cow to-day are made by some of those following these latter lines, but the requirements in the way of care and skill are far more severe than when a factory is the center of the business. A person intending to make butter or cheese on the farm to the best advantage will have to learn the most modern methods of manufacturing and marketing these products as well as to know how to handle cows to the best advantage."

"One of the best things about the factory system is the burden it takes from the women on the farm. The care of the milk and the making of the butter with the facilities generally found on the farm is very unsatisfactory, as well as quite burdensome to those doing the work. Butter can be made on the farm equal to that made in any factory, but on account of lack of facilities and skill, the quality is a rule very irregular and inferior. At some seasons much butter brings less than one-half and seldom more than two-thirds of what it would bring if made by an experienced man in a creamery or a well-equipped dairy."

COWS AT CALVING TIME.

I believe in having cows dry six weeks or two months before calving, and when thoroughly dry feed liberally up to within a week of parturition, says a writer in "Farmers' Advocate." It is the greatest mistake and the most common to have cows thin in flesh before calving. A cow should be fed liberally a week before calving and a week or ten days after calving, as her digestive organs have not recovered their normal power, and there is also the great drain of motherhood upon the system. We have thus two weeks of light feed with a great drain upon the system, and if a cow is not in good "heart" before calving she will be altogether too weak to do good work after. A cow has been likened to a steam engine. Well, we get up steam before we start the engine. A cow in proper condition before calving is, of course, likely to develop a large udder if she is any good. Feed lightly when the udder has developed to a "comfortable" size. The best feed, I find, is ensilage and a little bran and a cup of oilcake twice a day, with some nice hay. A few days before calving give one and a half pounds of epsom salts, one tablespoonful saltpetre, one cup black molasses mixed in two quarts of water as a drench, and the same a day or so before the calf is dropped. If the udder is a "little spreader" or caked, give one tablespoonful saltpetre twice a day as long as you consider advisable. It is a mild purgative and thins the blood. There is nothing better to reduce a caked udder before calving than to put a halter on the cow and take her for a one mile walk. If the weather is hot, be careful that she does not catch cold after her walk. Blanket her.—Exchange.

There was some butter at the Minnesota fair which was no credit to the butter-maker or the creamery he represents, although the poor quality may not have been due to the carelessness or incompetence of the butter-maker, but to the quality of cream received. But if a butter-maker knows that his butter is poor he would show his ability by not sending it to contests, and if he has not known it is high time he buys a tryer and learns how to score butter. We feel confident more good butter would be made and less poor exhibited at contests if the makers knew more about scoring. All of the best butter-makers know just about how much their butter scores, and most of them have only had one month's practice at a dairy school to give them a start, but they went home, bought a good tryer and went to work. But there is not one butter-maker in ten who has a good tryer, and very few have anything resembling a tryer.

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Tubular Separator is different from other separators—half the labor to run—saves the time of the cream. You may have a free trial of it. Catalogue No. 100 free.

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Horticulture

HORTICULTURAL TALK.

THE STARK GRAPE.—A few days ago I had the pleasure of sampling a bunch of Stark grapes, which came from Stark Brothers' Nursery and Orchard Company of Louisiana, Mo.

The bunch was well-formed, well-filled, compact, evenly ripened; berry medium; skin tough, yet thin; adheres to the bunch remarkably well. I am certainly well-impressed with it as a wine grape, to which class it belongs, being a seedling of Norton's Virginia Seedling. The fact that it is a late grape, ripening after the Orinole (our worst enemy in the vineyard) is gone, is another point in its favor. This is another case when a valuable new variety has fortunately (for the good of the horticultural world at large) fallen into the hands of the right parties to handle it.

These people are noted, I think I may say, for their world over, for getting hold of decidedly good, new varieties of fruit and giving the people the benefit of them, which otherwise they might never hear of.

APPLES FOR THE FAMILY.—I think many growers of fine apples make a mistake by sending all the best apples to market and putting away the culls for home use. Not only because the best is none too good for the home folk, but for the reason that perfect apples will keep until away along in the spring, and culls will not. This does not necessarily mean that the largest should be stored for the family, but in some instances the reverse. Send the big Ben Davis to market, for the city folks who allow size and beauty to draw so heavily on their imagination that they can not tell a poor thing when they taste it, and stock your cellar with a good supply of such varieties as Little Roman (Gillies), Newtown Pippin, Janet, Newtown Pippin, etc. Now is a good time to gather apples to be stored for winter. They should be stored temporarily in some cool, airy shed until freezing weather is feared, then pack in tight barrels or boxes and pack away in a cool cellar.

ANOTHER BLIGHT REMEDY.—An Illinois reader writes that she has discovered a positive cure for blight. It is to remove all blighted parts, burn them, then bore holes into limbs with a small gimlet, into which put one or more grains of camolene, owing to size of tree, then secure with grafting wax. Two doses per season is found sufficient to cure the worst case. I give this for what it may be worth, not that I have tried it, but then bore holes into limbs with a small gimlet, into which put one or more grains of camolene, owing to size of tree, then secure with grafting wax. Two doses per season is found sufficient to cure the worst case. I give this for what it may be worth, not that I have tried it, but

THE APPLE CROP.—Summing up reports from various sections I find that the crop in general is not overly large, nor yet small, but might safely be called a fair crop, considering that the fruit is unusually fine. Even in neglected orchards where no spraying was done, the fruit is unusually good, though nothing like as good as in sprayed orchards. This would suggest either that the drought of last season was hard on the insects, or that the benefit of spraying is being felt. Many growers are planning to ship their apples direct to Europe, which means to the right parties with the right kind of land, plant more apples.

THE WEATHER.—Same old thing. Friday gave us a steady downpour for 24 hours. This means that out of the fields for awhile and give Jack Frost a better chance to injure the sweet potato crop.

PEACH TREE BORERS.—

Editor RURAL WORLD: I have three peach trees that I have taken under my protection wing, mainly for the purpose of defending them against their enemies, the borers. I think they do more injury to the trees than they get credit for by weakening their vitality, when the trees succumb to the cold of winter, which gets the credit for killing them.

The books tell us that the moth lays her tiny white eggs near the foot of the tree, from early summer till autumn. The eggs soon hatch, and the tiny grub or worm enters the bark and goes no further. The next season they encase themselves in a sawdust-like casing in their holes under the bark, and emerging in the perfect insect, lay their eggs and perish.

My best weapon for destroying these pests is boiling water poured from the spout of a kettle. A dash of boiling water will cook the little eggs and grubs before they have gone far into the bark. I have never found grubs in the foot of trees usually, but in their trunks and where the branches join them.

I did not return from the south this year until early summer, and my peach trees were neglected. As soon as I had time I gave them my attention. Wherever I saw gum oozing I removed it, looking for grubs. I found a few, and scrubbed the trunks thoroughly with soap and gave them a dash of boiling water and filled all wounds with soap, working it in smooth and close. I examined these trees lately and did not find a grub.

There was not a bearing peach tree this year in this country, but the trees have great growth. My trees are Mountain Rose, Elberta and a seedling, the Mountain Rose being the favorite.

Peoria, Ill. MRS. L. HARRISON.

Written for the RURAL WORLD.

QUAKER MARVEL BEANS.

In reply to Mrs. L. Harrison, Peoria, Ill., relative to the Quaker Marvel Beans, I will say that they are remarkably fine and very productive. The man who sold them last spring in new soil. They grew nicely and yielded wonderfully well. The garden in which they were planted only been cleared of timber for about four years. It is possible that if they were cultivated in older soil they would produce even more largely. The Cluff damon has a bean something similar that is also very productive, and is easily grown, but the Quaker Marvel Bean is superior. She has raised sufficient from those obtained from Mrs. H. to plant quite a large area next spring, and is well pleased with the result.

DYCE.

DISPOSITION OF HORTICULTURAL PRODUCTS.

The following is from an interesting paper read by Prof. Howard McAtee at a recent meeting of the Missouri Valley Horticultural Society:

The subject assigned me is an important side of our horticultural effort. Much of our discussion centers around the problems of producing crops, best varieties, soil conditions, etc. This subject takes us to the other end of the season, when we must dispose of what we saved from the numerous snarls and pitfalls that beset or growing crops. I have in my home a three-year-old curly-headed interog-

tion point. Whenever she sees anything unusual in my hand, I am always greeted with the question, "What are you going to do with it?" That is the question we are greeted with to-day. What shall we do with it? When crops are small and prices good, this question troubles us very little, but when crops are abundant of quality is below what we are willing to put upon the market under our own private brands, then we begin to seek other outlets. But whether the crops are abundant or meager, whether the prices are high or low, there is one outlet which I believe brings larger returns than any other, and which I would put first in the line of profitable disposition of our products. That is the home use. Free use in our homes of the fruit in its green state, and an abundant supply for the winter and spring should be allowed to consume as much of our crops and of the best of them, as possible.

While I do not advocate the use at home only of perfect, merchantable fruit, I do insist that we should use something more than the culls for our own home consumption. There are men in every line of production who can afford to produce in the interest of science, or who find ample compensation for outlay of time and money in propagating some new variety or advancing the interest of horticultural science, but for most of us success will be measured in dollars and cents. Hence the disposition that we seek in the disposition that will bring us largest returns in cash or its equivalent. Some of these methods of disposition may be listed as follows: Canning, preserving and pickling, evaporating, reduction to cider, vinegar, brandy, wine, etc., cold storage or home storage for higher prices. It might be said that these are not methods for the foreman, but I question the wisdom of any of these methods; and so far as my observation and judgment goes, would say the market open at the same time the fruit is ready for market is the best outlet, and in the long run will prove the most remunerative. This does not mean, of course, that we must dump our products on the market nearest to us. I know not what the experience of our Gashland friends has been in seeking markets at a distance, but have no doubt they have found it satisfactory, as I know many similar associations have.

I have had some experience in canning. There is undoubtedly money in canning apples, grapes, peaches, berries, etc., but I doubt the expediency of the fruit-raiser, under ordinary conditions, conducting such a plant at a profit. The same is true of pickling and preserving. Mr. Helms, the great advertiser, and "G. varieties" man, is quoted as saying that he can at any time produce more than any small factory can afford. I have no doubt this is true, and since the small factory must compete with him and others in the selling market, and would have a larger per cent of expense in marketing, it would seem scarcely likely to be profitable to undertake such disposition.

As to evaporation and vinegar making I will venture the assertion that there is not a man here who has raised apples to any extent, but has had some experience along these lines. While we may be able to make it profitable in a small way, I doubt if any of us have found it profitable when we have undertaken it on a large scale. Judge Wellhouse, in a recent address, reports that in 1891, the second year of his large orchard here, they put in a cider plant. They thought they were making money, but he says at the end of the three years it began to dawn on them that they were acquiring experience only, and that they were making money out of the expectation of making money out of it. This was an uncertain road to travel. The next year they tried an evaporator. This is the way he reports it: "In about two years we had more experience. At the end of two years, when our books were balanced, we found that the evaporator had only brought us about what the culls would have sold for in the market; thus losing our labor, wear and tear of machinery, etc. Since this experience we have had very decided opinions as to what ought to be done with our culls, and as they were picked, we have sold them to the evaporator, giving us the most cash." These evaporators are still standing and free use of them is given buyers of culls.

Our members connected with the Olden fruit farm can best tell of their experience with manufacturing of surplus products. I understand they have been conducting their still house to the trust and sell their surplus products, of course, to manufacturers.

Storage, either at home or in some market center in cold storage, may sometimes prove profitable, but has many times proved disastrous. In a recent paper before the Iowa Horticultural Society, Prof. Price expressed the opinion that there must at least be a barrel profit between the November and March prices to warrant cold storage. He quoted Professor Corbett of the West Virginia Station, who has made an extensive study of the subject, as saying 10 cents per barrel increase in price would make storage on the farm profitable. This storage, contemplates a storage house with ice chamber for refrigeration, but this goes into the realm of speculation and it would never pay to go to the cost of erecting storage places unless we were sure of a crop of 1,000 barrels or more per year. My own conclusion is that our horticultural products would be most advantageously and profitably used when we have first provided liberally for our own households, and disposed of the balance to the highest bidder at the time the crop is ready for market.

FALL WORK IN THE GARDEN.

Roses winter best if laid down on the ground and covered with soil to the depth of three or four inches before putting on any litter or mulch from the barnyard, writes Eben E. Rexford in "Pacific Homestead." The reason for giving this first covering of soil are these: First, mice will not be likely to injure the bushes if soil covers them; second, if any barnyard manure is applied directly to the stalks they are often injured by it, especially if it is somewhat fresh.

Before attacking the bushes provide yourself with a sharp, smooth leather glove. These will enable you to take a firm hold on them, and that is precisely what is needed in handling them. Bend them over gradually and carefully, keeping one hand on the stalk near its base, to make sure that it is not being bent in such a manner as to crack it. A crack in the bush is quite as bad as a break. If I am unfortunate enough to bring on either when I lay down my roses, I at once cut off the injured stalk. It isn't worth while to try to save it. But it is richly worth while to try to prevent any injury of this kind. Handle your bushes with all possible caution. When they are

bent to the ground put pieces of sod on them, or something else heavy enough to hold them in place. When all the bushes are down apply your covering of soil. This part of the work can be done to advantage during the early part of November, but the covering of litter or manure I would leave off until winter seems at hand. Let this be eight or ten inches deep, and let it cover the entire bush.

Newly made bulb beds should by all means receive excellent protection. If it is not given the action of frost in the soil will often heave the bulbs from their places, breaking their newly formed roots and leaving them in such a condition that it will be impossible for them to produce a good crop of flowers in spring. Let the manure be old, if possible, if that is used. Fresh manure is always harmful to bulbs, though not to such an extent when used simply as a covering as when mixed into immediate contact with them.

Before covering herbaceous plants cut away all the old flower stalks. Hollyhocks are particularly subject to injury in winter because of the spongy character of their leaves. These absorb moisture and retain it, and after a little they decay. This, if not checked, is soon communicated to the crown of the plant, and when decay sets in there, it is almost impossible to save the plant. Before putting any litter on the plants, first cutting away all the large leaves. When the box is in place I bank about them the same as other herbaceous plants. In spring I do not remove the box when the mulch is taken away, but leave it for a time to protect the foliage from the early rains and the moisture from melting snow. As soon as the plants begin to grow they will be in a condition to take care of themselves, no matter how much rain we have. Unless I protect my hollyhocks in this way I seldom succeed in bringing them through the winter satisfactorily.

Cover pansies lightly with leaves, with evergreen branches or woven wire netting to hold them in place. A thick covering is sure to smother this plant.

STATE HORTICULTURAL SOCIETY.

The 6th annual meeting will be held at Springfield, Mo., Dec. 2-4, 1902. The largest meeting, the fullest attendance, the best programme, the finest exhibit of apples, the best of instruction for the teachers of our colleges and practical fruit growers of our state, are features of the meeting.

One hundred and fifty dollars in premiums will be given. Rates on railroads and hotels. Matters of interest to every fruit grower will be discussed in an able way. The World's Fair, the Preparing of the Fruit, the Reports from Fruit Men, the Questions and Topics for Discussion, Suggestions, Commercial Fruit Troubles, and the presentation of Practical Papers, will interest you.

L. A. GOODMAN, Secretary.

400 Warwick Blvd., Kansas City, Mo.

NEW AND IMPROVED VEGETABLES.

Never in the history of market gardening have such fine fruits and vegetables been seen in the local markets as now—and all because the man with the hoe—at least he who helps to supply the big cities with their daily supply of fresh garden truck is making a great fuss over the demands of the hour than his city brother gives him credit for being, says "Field and Farm." If one were to compare the flavor, substance, appearance and general good qualities of the vegetables sold here ten years ago with those offered in the markets to-day, the difference would be striking, even to those who know little of such matters.

Probably no more striking example of the progress made in the time mentioned can be found than is furnished by the tomato. Here is an humble product of the garden, beloved by all men who have a proper fondness for good things, that has been so changed and improved of late as hardly to know itself. There are large and small and highly colored tomatoes in the market, but they were full of seeds. Here, then, was a serious situation confronting the big tomato growers, as well as gardeners generally. There were then and there are still men who make a specialty of tomato growing, and who originate all the new varieties offered to the growers. These did not despair, but said if the public would not eat a tomato with seeds in it they would grow a tomato without seeds, and they did not entirely without seeds, to be sure, but with so few seeds in them as to justify the assertion that they were seedless. They grew a seedless tomato. This was not the only change made in the tomato. Without the great number of seeds they were found to be far sweeter in flavor. This flavor was retained while the size and solidity was increased, until to-day there are tomatoes running up to six inches in diameter, many of them weighing as much as five pounds, as solid as a piece of meat, defy all sorts of weather, that last from the first picking until the coming of frost, and as high as high as twenty tons have been taken from a single acre. The tomato specialists are justly proud of their accomplishment. Improvement in other vegetables has been just as great, and often without such good reason. Many gardeners objected to the old way of growing lima beans. They did not want to go to the expense of cutting poles and sticking them in the ground, and it took the beans a long while to mature, many of them turned out to be lima beans which grew only two feet high, needs no support and upon which the beans mature quickly and in great quantities. While they were at it they originated a new lot of string beans which were ready for the market two weeks earlier than the usual kinds, which were really stringless and so tender they snapped when not picked carefully. This was another big stride.

Then the men who knew more about strawberries than most folks imagine, thought they would see what they could do. First they looked at the strawberries almost as big as one's fist, with whole fields averaging a dozen to a full quart measure. Then they improved the flavor of the berries until they were as sweet as the wild berry. After that varieties were introduced that were earlier, and others that were later, and the strawberry was not satisfied with that, a progressive Frenchman brought forth a strawberry that is a marvel in its way, for it produces three crops in a year and practically ever-bearing until killed by frost. These berries can be picked in the spring, in the summer and again in the autumn. The originator received a certificate from one of the big societies.

In the meantime the fellow whose hobby is a perfect cucumber was not idle. Some one objected to the irregular shape, and so the cucumber sharp and straight of fruit, but extended the season for the originator received a certificate from one of the big societies.

In the meantime the fellow whose hobby is a perfect cucumber was not idle. Some one objected to the irregular shape, and so the cucumber sharp and straight of fruit, but extended the season for the originator received a certificate from one of the big societies.

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GERMAN KALI WORKS
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Another grower thought there were too many protuberances—warts, the growers call them—on these latest ones. So he went to work and grew them so there were very few warts on them and the spines, or ribs, were all even and a regular distance apart. Another cucumber man thought they were mighty fine on the outside, but ought to have fewer seeds, so he grew them with fewer seeds. It seemed that nothing more could be done, when an enterprising Jap, probably looking for recognition, Spain produced a large onion that was fine grained, of mild flavor and almost white. The native onion growers thought it was fine and that they could turn out something just as good, if not better. They tried and succeeded and during the proper season the fine, big white onions on sale in all the fancy fruit stores, which the dealers call Spanish onions, are the result of that effort. They are Spanish onions only to the uninitiated buyer, for they have been no nearer Spain than Valverde or Brighton. Despite the fact that these onions are often fifteen inches around and grow so freely that a acre will produce a ton, they have been taken from a single acre, they are so mild and tender that any one can eat them without ill-effect.

Physicians regard them with much favor, because they induce natural sleep and patients who could by no means eat the ordinary strong onion can partake of them freely. As it is, the home-grown product to-day excels all onions brought from abroad, not excepting the far-famed onions of Bermuda. What has been told here simply furnishes an idea of the great progress made in this humble line of industry. Every vegetable on the market has been improved so greatly that the consumers would make a great fuss over them if they were to go back to what they thought was so fine ten years ago. It is clear the brother of the ox is doing his part, even if he does it quietly.

The German Empire reports in a census of 1900 that to each square mile of land in the country there were 223 plum trees, 251 apple trees, 119 pear trees, and 104 cherry trees, or 306 trees of those four kinds. To the square mile of tilled land the average is 519 plum trees, 386 apple trees, 198 pear trees, and 158 cherry trees or 1263 trees of those four kinds. The Empire shows 125 plum trees, 98 apple trees, 42 pear trees and 35 cherry trees—each 100 inhabitants.

The Apilary

AN APICULTURAL CHAT.

Editor RURAL WORLD: Our year's work with the bees is just about finished. All up-to-date bee-keepers have taken off their honey supers and have them cleaned and stored away for next season's work. They know just about what their honey crop is and amount in pounds. They know just about what their honey crop is and amount in pounds. They know just about what their honey crop is and amount in pounds.

1902 AS A HONEY YEAR IN ANDREW COUNTY.—A more favorable outlook for a honey crop was never more apparent than it was last spring. There were no late frosts to kill the early blooms, and the spring, up to May 1, was unusually dry. On account of the above conditions the bees built up rapidly in numbers, and by the 14th of May they were very much

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CLARIFYING BEEWAX.

It is generally clarified some beeswax presents a very clear yellow, while other wax when compared with it has a dirty look. "Country Gentleman" says this is owing to the proper method employed in one case and lack of thoroughness in another, albeit not always, for there is such a difference even in beeswax that it is questionable if some could ever be made clear. If clarified as it should be, however, the chances are nine of ten of its all presenting the same fine, even appearance.

The way to do it is to take the comb one has to clarify and put it in a large iron kettle, such as is used on the farm outdoors, filling it with water. In this the comb should be allowed to boil for several hours. Meanwhile, a tub having been filled half full of water, on which is floated an old board of some sort, the mixture at the end of that period should be dipped out with an old pan or dipper from the kettle and poured through a hemp sack or other thin material that is allowed to rest on the board and strain the wax. The result is the wax run through the sack into the tub, leaving considerable residue in the sack, which can readily be separated by squeezing or rolling the mass with a round stick or similar means of pressure.

The wax will float on the surface of the water in the tub and soon cool, and while this is taking place the kettle should be cleaned and filled with clean water; then

afflicted with the swarming fever. As it is generally the rule that we have a good honey crop when we have early swarms, it made us bee-keepers feel very much disappointed in not having a better honey crop.

In this locality we had all the flowers we wanted, but when the baseword was about in its best we had a solid week's rain which washed away much of the nectar. I am sure my loss during this week averaged twenty-four pounds to the colony, which made in the aggregate for all my stands about 700 pounds of comb honey. So you see the bee-keeper loses by the heavy rains, as well as the grain raisers.

MY SUCCESS IN INTRODUCING A QUEEN.—You know it is claimed that a young queen will not swarm inside of a year if there happens to be no other queen or queen cells in the hive when she takes charge of the affairs of housekeeping. Well, to make my story short, I bought a young queen of a reliable breeder last spring. I introduced her accordingly to directions, and was very successful for the time being. She was a good queen and proved to be a pure Italian, and the way she built up the colony was astonishing. I calculated I should get eighty or more pounds of honey in the comb, for she was one of those red clover long-tongued kind. Well, one day along about the 1st of June, while I was working in the apiary, I was surprised to see my young dollar queen leading out a swarm of bees. But she didn't lead very far, I guess, for I picked her up in a dying condition after the swarm had been in the air a few minutes. I found her about four feet from the entrance of the hive, from which she had made her exit. She was surrounded by about twenty bees of her color, who were mourning, I suppose, over their dying sovereign. Next opened the hive and found five queen cells among the frames. I placed two of the frames containing two of the cells in a new hive, for the clustered swarm which had settled queenless. I knew they were queenless, for I saw no queen back on their own accord to the new hive which was placed where the old one was and the old hive containing the rest of the queen cells was placed in a new location. However, to be sure that there was no other queen among them I placed on the new hive an entrance guard, so that the bees could not enter the hive, and as I never saw any trying to enter I concluded the young queen swarmed on her own accord.

Her two daughters, which I reared from the queen cells, became purely mated, so I did not have any serious loss except the honey they might have made, but I guess a man can't lose anything he never had. Can he? **AMOROS L. RILEY.**

Andrew Co., Mo.

GROWTH OF THE BEE INDUSTRY.

A few years ago, says "American Cultivator," some of the leading bee-keepers in this country made an estimate of the production of honey in the United States, and decided that it was about 50,000 pounds of comb honey in sections, or at least 1,000,000 pounds of extracted honey, the entire crop being worth something like \$10,000,000. To those who are not in the honey producing regions and see but little of it, excepting an occasional bottle or can, or a little box of comb at the grocer's, these figures may seem to be extravagant, but the officials of the United States Department of Agriculture place the amount and value at double those figures, and even then they are liable to be below the real production. The farmers who have but one or two hives, and use most of the product on their own table, or spare an occasional pound or two to some good neighbor, are often overlooked, or if called upon for a statement they have no accounts, and are more apt to estimate below the amount of production than above it.

Bee-keeping was not thought of as a business until about forty years ago. A few kept them in small numbers in the old-fashioned box hives, and when they wanted honey for family use they killed the colony with the smoke of burning sulphur. Then came the improved hive, with its movable frames, and the supers or top boxes with the pound sections in them. We think we saw these first about thirty years ago. To this may be attributed most of the gain in honey production, more than to any other cause. The growth of the business was rapid from 1869 to 1899, increasing from an estimate of 15,000,000 pounds to nearly 60,000,000 pounds in the twenty years' period, and in the ten years following it was thought to have doubled again, and though, as we have recorded above, foul brood and black brood have done much damage in certain localities, it is thought that the interest awakened, and the fact that it is no longer necessary to destroy the colony to get their honey has led to a general increase throughout the country, and that it is now growing faster than ever. Yet experts estimate that the nectar-producing plants of the country would be ample if there were ten times as many bees kept and properly distributed as there are now. What may be the possibilities if bee-keepers succeed in getting strains of bees with tongues long enough to get the honey from the red clover blossoms, or how much more of clover and honey plants may be grown, it is impossible to predict.

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the wax should be put back in it and boiled up a second time. It should never be strained carefully through a fine meshed cloth several times, and as the sack or cloth used for this purpose is of no special value afterward it should be thrown away.

Beeswax clarified in this manner can be melted without water and put in molds ready for the market, which otherwise might have been considered worthless and never used at all. Indeed, it pays to save all the scraps and pieces of old comb, and at the end of the season treat them as described, for thus will first-class beeswax be obtained, and that always finds a good market.

RHEUMATISM AND THE BEE CURE.

A good deal is being said just now about the "bee cure." There are some reasons for doubting that this will become a fad, for it is not pleasant enough, but it seems likely to acquire at least a certain vogue. A correspondent, writing from the east, says of Maryland, tells of the misfortune, or rather the good fortune, which befell a venerable citizen who was in a garden where bees were living. The insects, all in a swarm, lit upon the old gentleman, who was a victim of rheumatism, and stung him. In the words of the correspondent, "when the swelling from the stings disappeared, the rheumatic pains and stiffness went with it, according to the testimony of the sufferer, and he no longer swears at bees, but by them." Another sufferer from the same malady is reported as saying that he deliberately tried the experiment by inducing 21 bees to sting him in places where the disease seemed to start. In less than 24 hours his relief from the malady was complete. Some persons may be inclined to regard these reports as apocryphal, but perhaps they are all right. At least, suggests the New York Post writer, it seems clear that the bee cure would be excellent for any disease wherein the chief difficulty was a tendency of the mind to dwell upon and magnify the malady. Where turning thought into new channels would do any good, the bee cure ought to prove a distinct success.

Sometimes it is spoken of as the common thing that, when a swarm issues with a clipped queen, the queen will be found on the ground with a cluster of bees. In the hundreds of cases I have seen, such a thing has not often occurred. If the queen is quickly found, she is looking out for herself; and if left long enough for a cluster to form she is generally back in the hive. It is not the common thing that the queen is not found quickly, and hence the bees find her before the bee-keeper? If that is the case the queen should generally be found with a cluster of bees.—Bee Gleanings.

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Popular Medicine for Stock

Lone Oak, Texas, March 29, 1901.

I find your Black-Draught Stock and Poultry Medicine one of the greatest stock medicines I ever used. I think it saved a fine mare for us. Her kidneys were affected but she was all right and ate heartily. I tried all other stock medicines but they did me no good.

I. W. ROBERTS.

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Horseman



It is a great Axtell year. His get are winning right and left and two weeks ago he put two in the 230 list, the trotter (mammoth), 2:20, and the pacer (Axtell), 2:09, the former beating the hitherto unbeaten Anzella, 2:07.

Hay should be got green and free from dust and mold. Inferior hay, which has been heated in general full of dust, and when fed to the horse will produce an irritable cough which may easily lead to a permanent defect in his wind.

Dirty, stagnant water should never be used for a horse. It is generally full of putrefying organic matter and swarming with multitudinous animalcules; indeed, the condition of the one is a necessity to the other—hence the importance of using only pure water for drinking purposes.

The demand is growing stronger for high-class horses for the time for the time is a scarcity of good breeds, and as the horse producing countries of the old world are as short as we are on good horses the probability is that for the next ten or fifteen years there will be no drop in prices.

Sagwa, 2:13, trotting, the celebrated "gold brick," as termed by his owner, Thomas W. Lawson, took a record of 2:24, paces at Tazewell, Mo. It is a half-mile track. Last year Sagwa was timed a mile at Terre Haute in 2:30, and so may improve and be yet a sensation, although as a pacer.

Frank Ervin, the Kansas City, Kan., trainer, now in the east with Riley B., 2:05, and others, recently sent Sylviana, 2:12; Almond, 2:14, and Dr. Spellman, 2:15, back west to his brother Dan, Tex., along with the balance of his stable and will race them through the Texas circuit.

The entire racing establishment of A. H. and D. H. Morris was sold at auction, Oct. 1, at Sheepshead Bay, L. I., 37 animals bringing \$17,750. Reckon, 14-year-old ch. m., brought highest price, \$17,000; Corcoran, ch. c., 3 years, \$10,000; Bowling Brook, b. h., 7 years, \$8,100; Filigrane, b. h., 6 years, \$3,300; La Miere, b. m., 3 years, \$6,000; Hanover Queen, ch. f., 3 years, \$6,000.

The statement recently made that Baron Oakland, like the other horses in the world, is a perfectly sound horse at every point. James L. Dodge, who is handling him, has driven him a mile in 2:14, and there is every reason to believe that he is as fast as rhythmic. He is a richly bred horse, being by Oakland Baron, dam by Boston Wilkes, second dam Almaty, 2:34, by Almont, and third dam Alma Mater by Mambrino Patchen.

"We have noticed," writes "Variety" in "Trotter and Pacer," "that Hudson and a few other drivers, who have recently bounded into the big circuits, are in the habit of driving some races under the guise of their stop watches. This practice does not look well to say the least, and if a driver's mind is intent on winning a heads' apart finish he has no use for a timer. There should be a section added to the rule as to timing that no driver shall use a timing watch while driving a horse against other horses in a heat or race."

Some horsemen cannot see anything to be gained in showing their stallions and their get at a fair, but in this they are short-sighted. At a nearby fair recently, says a "Horse World" writer, I sat in the grand stand while a couple of well-bred and fast stallions were shown on the stretch, and the amount of favorable comment they elicited from the occupants of the stand was simply surprising. I feel sure that both those horses will get a lot of patronage next spring that they would not have received had they not been shown at that fair.

The death last week of the Hon. Frank Jones of Portsmouth will be a decided loss to the trotting horse interests. He had gathered together at Maplewood Farm a grand lot of breeding animals, and he had lived there in the most comfortable and pleasant manner. His farm would have taken high rank among the breeding establishments of the country. Mr. Jones was a liberal purchaser of trotting stock, and his racing stable has met with excellent success. Consequently brilliant upon their first season out of the grand colts trotters, Pacers and Idolls, both big money winners.

We have received the fourth volume of the "American Standard Horse Register" published with the authority of the association for entry of saddle horses in this country. The entries of stallions number from 1308 to 1785, of mares from 1722 to 225. The volume contains some interesting bits of saddle-horse history, and excellent pictures of many horses and mares which have given fame to the breed, and confirmed the wisdom and far-sightedness of those who established it. That the American saddle has a distinct and prominent place among equines, the proud position it occupies at our horse shows is sufficient evidence.

E. T. Letton & Son, of Walker, Vernon county, Missouri, will hold a dog-out, but sale of standard bred horses, November 7, at Valley Grove Stock Farm, six miles north of Walker, Mo. The sale will include Silver Simmons, 2:16 (grandson of Simmons 2:20); Eaglyte, son of Onward, to be sold privately. Brood mares by Onward, Norval, and weanlings, yearlings, two-year-olds and three-year-olds by Silver Simmons, Eaglyte, and out of Onward and Norval mares. Transportation

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will be furnished free from Walker to the farm. Lunch will be served on the grounds. See the advertisement in this issue and write for catalog now ready.

Those who have been predicting a slump in the Wilkes boom will not find very much comfort in studying the records of the year. In the list of new 230 performers, the Wilkes family overshadows all other families. The fastest pacer of the year, the fastest new trotter of the year, the biggest money winning trotter of the year, the fastest new trotting stallion, mare and gelding, as well as several other of the season's record holders are direct descendants of George Wilkes, while in the table of 230 sires, stallions of the Wilkes family are in great majority. Other families have made an excellent showing, but that of George Wilkes stands in its accustomed place at the head of the list.

John E. Madden's noted trotting stallion, Adell, by Advertiser, while playing in his paddock at W. W. Estill's Elmwood Farm, Lexington, Ky., a few days ago, in some way broke his left foreleg and had to be destroyed. Adell took a record as a yearling of 2:32, which is the world's record. He sired Adabella, that got a record of 2:24, as a two-year-old, by Rowellan, that trotted in 2:15, as a three-year-old. He is a son of the noted Beau-tiful, whose pedigree apparently is doomed to misfortune, as he has lost five famous sons in the prime of their bright careers—Bell Boy, that cost \$50,000, was burned; Electric Bell, Bow Bells and St. Bel died of pneumonia. Adell cost Madden \$10,000 last winter at auction.

Kentucky's supremacy as the birthplace of fast horses is shown by the fact that eight out of twenty of the new 230 trotters were foaled in the Blue Grass region, while no other state produced more than three. Alice Carr, Baron De Bay, Dulce Cor, Herperus, Osannum, Polindexter, Rhythmic and Susie J. were all raised within a radius of a few miles from Lexington. California produced Idolls, Monte Carlo and The Roman. Major Del Mar and Wilkes were bred in New York, the former by the late William E. Spier of this city, and the latter by Delbert Dinehart of Hudson, Illinois, with Ida Highwood and Waubun, is the only state that has sent to the turf more than one such fast one this year.

In 1883 there were 1,782 trotters that made new records of 2:30. For the past four years less than half that number have entered the 230 list each season. The production of speed has been cut down to about one percent in number of horses, from the high-water mark of 1883. This year's crop of new standard trotters will hardly exceed the average of the past four years, and is likely to fall below it. But extreme speed is much more abundant, as shown by the growth of the 230 list. The surplus wealth of the country here has increased largely in the last few years. There are ten wealthy buyers looking for high-class horses and for extreme speed where there was but one a few years ago.

A horseman referring to the well-bred horse in one of our exchanges, among other good things says: "An amiable disposition can be cultivated in a horse, but it is more desirable that the animal should inherit it. It is easier to breed an intelligent and cheerful disposition in an animal than to expect the necessary time and patience to cultivate it. A pig-headed, narrow-brained, long, coarse-eared and thick-skinned stallion should never be used for breeding purposes. The animal kingdom is like clay in the hands of the potter; it can be fashioned into desirable form and disposition by the potter, and the principles of breeding. The horse with a small brain can be taught to do a few performances well, but its ability as a general-purpose animal is restricted as contrasted with a horse of ample brain capacity. If ancestors perform the service that is expected of their progeny, their offspring will in degree inherit the disposition to fill the sphere of their parents. It is now conceded that developed qualities are transmitted, and foals will learn more easily to perform services if they are descendants of developed ancestors. Parental impressions are impressed on the disposition of the offspring."

"How few county fair associations take the care of their tracks that they ought to. Not one association in ten seems to realize that the track is a part of the fair, and that the horsemen who patronize them a track that is at least safe to start horses over. A recent fair, which I attended," writes "Raymond" in the "Horse World," "illustrated to me the slackness of the average county fair association in this respect. Grass and weeds on the track showed how little it had been worked before the fair, and its surface was so poor as to be positively unsafe to race over. In some places the horses went in half-way to the coronet, while in others it was as hard as asphalt. Every year money is spent in making the buildings for cattle, sheep and pigs better and more comfortable, but for the trotters and pacers which draw the crowds, little is done. On any afternoon at a county fair four-fifths of the people on the grounds are to be found in the grand stand, and packed along the home stretch. That fact alone shows how much of a drawing card the race part of the program is. Would it not be doing simple justice to the owners of the trotters and pacers to give them as good a track as work can make, and thus permit fast time to be made, and make racing safe for the horses, as well?"

BLUE BULL NOTES.

By L. E. Clement.

I am ready now to join issues with Mambrino, Jr., against that scape goat of the pencil pusher, the ever-present, but never captured, compositor. Did they ever treat Mambrino, Jr., or any one else so bad as to rob a horse of his optics? I wrote of a daughter of Douglas T., the blind sire, and they make it "The blind sire."

Red Ink, bred by Capt. R. Barnett, is a son of the great list sire, so is Rustic B., bred on the same farm. The mare by Rustic B. is out of Nellie Smith, by Almont Pilot, second dam Majesty, by Marmaduke, third dam, Chera Chase, by Idol 177. Nellie Smith is also the dam of Red Ink. The dam of Rustic B., 2:25, was by Marmaduke, second dam, Phoebe, by Almont, by Al West, out of Majesty, by Marmaduke, as above. Nellie Smith will be the dam of another sire before very long, and she has other colts that will trot into the list and add to her reputation. Red Ink, as is well known, was gelded and became one of the great carrying team.

the public sales, and his friends to get their merits before the people. Some of the best of the get of the popular sire Walnut Boy have been given to the public through the medium of his public sales. How many times when you have seen Monnet, Gyp Walnut and King Walnut winning, have you wished you had a standard Walnut Boy stallion. Oct. 28 you can buy one at your own price, as Dr. Robinson sells without protection or by-bid. Medley 2:13 is by Princess, dam by George Wilkes, and is not only one of the best bred horses to be found, but he is a sire of salable, fast, desirable individual horses, and there is plenty of dormant speed by him at Windsor and Green Ridge. Most of the brood mares in the sale are bred to Medley. A handsome pair of mares, one by Mammoth Jack, such as raise \$200 to \$300 mules. Don't forget the date, Oct. 28, and remember that Bob Harriman will tell the stories. See advertisements of sale and of the only horse and beef cattle auctioneer man, Bob Harriman, from Bunceton, the best cattle town. Almost 35 blood is desirable. Maximum is one of the best sons of Almont, and the sire of Bandello, 2:15. You can buy the first of his young things at the sale and they are good ones.

At Capt. Barnett's sale Rustic B. by Newcomb, son of Nutwood, was sold for only a little more than \$1,000. In the next Year Book he will appear as a sire of speed, and should earn more than his purchase price every season. Rustic B. by Medley, Walnut Boy or Bandello should be worth as much to the purchaser as Rustic B. has been to his new owner.

Messrs. Letton & Son and Horace F. Lett are closing out their horses. It will scatter some good sires at new points in the state. Cambrist, by Wonder, son of Blue Bull, made friends on Saturday at the State Fair, and more than one Missouri breeder made up his mind that he would have a little Cambrist blood on his farm. Next season will be the greatest for him since he has been in Missouri.

You will note a call for a full list of standard sires owned and kept in Missouri. Send in your data. The list will be published until practically complete. I shall go to work at it at once, and will publish it as soon as we think it is sufficiently complete to make a desirable reference list. It will be worth many dollars to stallions in the list, and will cost you nothing, only a little time in the effort to help yourself and your friends. Send what you know and a standard stallion in the state and let me know of any change in ownership of any or all standard stallions in the state or brought in between now and the date of its publication.

REGISTERED STALLIONS.

A complete list of the standard bred stallions owned and kept in Missouri is desired by the management of COLMAN'S RURAL WORLD, and they have asked me to see that the list is made. I shall undertake the construction of such a list. In order to do this, I will compile the list I want the friends of every standard stallion in Missouri to write me, giving name and number, record if any, and the progeny of such horses that have taken standard records. The list when finished will surprise even those who think they are familiar with the breeding interests of the state.

L. E. CLEMENT.

The following will serve as a guide of what I want: Prodigal 2:00, b. h., bred by R. P. Pepper in Kentucky, sired by Onward, dam Sylvia, by Egmont, owned by Dr. Abell of Sedalia, Mo. Sire of five standard performers and grand sire of two. In the stud at Peirce City, Mo. This is a sample of the information I want for such a list. Such a list will be the most valuable contribution to the horse literature of the state yet compiled. I shall undertake to correct any errors that may be sent in.

TO CURE SCRATCHES.

Editor RURAL WORLD: I read what Prof. Law says on the subject alluded to and it will do very well from an allopathic standpoint, but I do not believe in that school of medicine, with its large doses of powerful drugs, etc. The professor personally is a fine fellow. I met him about nine years ago at Lincoln, Neb., and had a very enjoyable time with him. I was introduced to him by a personal friend of each of us.

One of the best, the simplest, cures that is, as far as the effect from the disordered condition of the system that causes the disease is concerned, is a sour apple poultice. Take some sour apples and stew them to the consistency of table apple sauce, omitting, of course, the sugar; apply the poultice to the affected eye in this stew, hot, each night about two nights will usually cure the disease, and three nights is pretty sure to in the most aggravated cases. This will produce a healthy condition of the skin, and if the hair has not disappeared, will prevent its disappearance, and if it does not appear it will promote a rapid renewal of it.

Another cure that is first class and homeopathic is this: Get the mother tincture of Thuja from a homeopathic druggist—don't go to an allopathic druggist for it; their tinctures are not uniform, as are the homeopathic ones. Take the tincture in the proportion of one portion of the tincture to ten portions of distilled water. No alcohol, for it is injurious to the skin. Wash the part thoroughly with hot water—very hot rain water is the best—use no soap; then bathe three or four times each day with the lotion, and in two days the part will be in its normal, healthy condition.

What Prof. Law says about the systematic condition is well put, but I don't believe in physics for man or beast. The brain makes—not too much brain either, for that irritates the stomach—will do; the face is the whole, not the meal. My own mare has a beautiful every night with her supper, except in summer, when I "graze her" lightly every day. This is for the animal that the professor classifies as "the pampered animal," and in addition give the animal more exercise when pastures are heated. For the "debilitated" give "nutritious food," as he directs, and give for a tonic three times each day about one-half of an hour before feeding, homeopathic six o'clock, and take the six and give eight drops on a lump of sugar or give same quantity in half a teaspoonful of water. Give this for three days; then for about one week a dose morning and night.

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A SPAVIN
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Dr. B. J. Kendall Co., Des Moines, Iowa, has a new and improved Spavin Cure, which is a sure cure for all the diseases of the back and spine. It is sold by all the leading druggists and horsemen.

EPIZOOTIC OPHTHALMA, OR PINK EYE.

This is a disease which affects a great number of cattle without apparent cause. It occurs at any season of the year. The symptoms are those of severe inflammation of the eye, the mucous membrane becomes red and congested and tears will drop from the eye, the eyelids become swollen and the eyeball shows a bluish-white color; occasionally small ulcers or abscesses form in the body of the cornea. In very severe cases the ulcer may extend through the membrane and allow the humors of the eye to escape. In such cases the use of the eye is permanently lost.

TREATMENT.—As this disease is contagious it is very important that the animals affected should be isolated and kept well away from those which are not suffering in a similar manner. Animal should be placed in a darkened stable and the eyes washed with warm water which has been added a dram of salt to each gallon.

If the membranes of the eyes are extremely congested, five grains of sulphate of zinc with five grains of morphia and twenty grains of boracic acid should be dissolved in an ounce of water and a few drops of this dropped into the eye with a dropper. Use twice a day. To clear the white deposit from the eye, rub up two grains of yellow oxide of mercury with a dram of vasoline and place a small amount of this well into the eye twice a day.

Repeat this treatment with a solution of tonics. We could prescribe nothing better than Dr. Hess' Stock Food, the scientific compound for horses, cattle, cows, hogs and sheep; sold on a written guarantee; 100-lb. sacks for \$5.00, smaller packages at a slight advance.

Send in small doses. In every package is a little yellow card containing a few lines of personal advice free and prescriptions for his animals from the eminent veterinarians.

Write and state what stock you have, what stock you have fed; also mention this paper, address Dr. Hess & Clark, Cincinnati, Ohio, and for this information you will receive one of these valuable books free, postage paid.

THE ORIGIN OF THE HORSE.

A New York state correspondent who breathes the air of the historic Hudson river, writes of the cold-blooded opinion of the value of John H. Wallace's history of "The Horse of America," says the "American Sportsman." We have, on several occasions, given high praise to Prof. Wallace's valuable book, but we have always discredited his theory that the horse of the western continent was a descendant of the Spanish horse, imported from Spain early in the 16th century. There is very high authority for the statement that there was a pre-historic man who had for his companion a pre-historic horse, long before the red man came to howl in the howling wilderness. Prof. Leidy, the eminent geologist and authority on archeology, says the pre-historic man was here before the Indian and that he had a pre-historic horse to ride. The learned professor also says that while it is true that Columbus found no horses among the Indian tribes when he first landed in the new world in 1492, there is no longer room for doubt that the horse lived on this continent before the race of Adam.

The Old Testament has many references to the horse. The inspired prophetess Miriam, taking her timbrels to swell the song of triumph that good old musical Moses gave to the poetry of the ages, in celebrating the drowning of Pharaoh and his cavalry in the Red Sea, says: "Sing ye to the Lord for he hath triumphed gloriously. The horse and his rider he hath thrown into the sea."

We do not quote this as bearing on the origin of the horse, but to prove his all-potent omnipotence, even in those dreary old times.

It is observed that the horse is mentioned first over the soldier in the divine song of the inspired prophetess as the most important in the drowning of Pharaoh's hosts.

should praise his works. And on the bank stood a German, for the Germans are always pushing themselves everywhere. The Lord God showed the horse to the German and asked: "What is this?" "Perd" (German for horse), answered the German. "What," exclaimed the Creator; "do you say 'Perd' (German for contempt) to my work? But you will never ride on this creature, you lubber! or, if you do, you will ride like a fool." Having said the Lord made a present of the horse to the Pole. This is why the Polish cavalry is the best. Then the Germans begin to hurry after the Lord on foot, and to beg forgiveness of Him, and this is why the Germans have become the best infantry in the world."

CONFORMATION OF THE TROTTER.

Says Hawley in the "Stock Farm": The conformation of the American Trotter has always been a subject of much discussion, and yet no two critics have ever agreed as to the proper conformation, if any strict rules can be laid down by which to measure the form of the type. So many are frequently misnamed ones. Hambletonians are called good-looking that actually lack every point in the make-up of a proper conformation, that it is difficult to tell by what standard of excellence trotters are judged. The one distinctive characteristic about the American Trotter is coarseness, which in many cases makes the animal almost grotesque. Of all trotting stallions that have been seen within the past twenty years very few have been possessed of a conformation that would pass criticism, and in most instances the stallions of the past as well as those of the present are extremely coarse brutes and frequently misnamed ones. Hambletonian himself was coarse to a degree, and while he possessed a striking appearance by reason of his great muscular development, he was an exceedingly plain horse, almost flabby in appearance. Mambrino Chief, progenitor of another family, was a stallion equally coarse as Hambletonian, while the Patchen family are a rule trotters of a great deal of quality. The most perfect individual I ever saw among the older stallions was Dictator, and even when a very old horse he was impressive in appearance. Dictator had a very blood-like head and neck, fine ear, broad countenance with the eyes standing well out of the head, a strong short back, oblique shoulders and as perfect a set of legs under him as were ever seen. He had the quality of a thoroughbred, every bit of which he got from the Star family, as he was not in the least of the Hambletonian type. Of all the sons of George Wilkes, the most attractive in appearance is Wilton, for while he is somewhat underbred, he is full of quality and possesses plenty of substance as well. His son Moquette is, I think, the handsomest trotting stallion I ever saw, not having possibly quite as much of the superficial beauty so noticeable in a horse of the Hambletonian type, while entirely lacking in the flabbiness of that horse. Unquestionably one of the best-looking horses in America to-day, and from my point of view the most perfectly shaped stallion I ever saw, is McKinney, he having quality, substance and nearly perfect conformation. Baron Wilkes is an unusually crude horse, and next to Wilton is the most nearly made son of his sire. There is a very marked difference between a show horse and one of nearly perfect conformation, yet lacking in style. Mambrino King was a show horse as was King Rene, yet neither of them were horses that would make much under a critical eye in search of the proper structural points. I have seen horses in the show ring that were round and fat and sleek, with plenty of style and beautiful flowing mane and tail, that would captivate most of the spectators and the judges, and yet were in reality deformities. There is much difference between substance and strength, the latter frequently going with great coarseness, while properly balanced substance is always tempered with quality. There is also a marked difference between quality and fineness, the latter not infrequently being mistaken for lightness. Quality is in reality nothing more than texture or finish.

HOW LOCKJAW IS PRODUCED.

A writer on lockjaw in "American Medicine" says: The etiologic factor in producing this malady is a small bacillus which exists in barnyard soil and dust, and which gains entrance into the human economy by an open wound, often so small as not to have attracted attention. It does not produce pus, cannot proliferate without oxygen, produces little or no visible irritation in the wound, and probably does not invade the blood nor lymph channels.

The period of incubation in the acute form is usually from four to ten days, while in the chronic form it is longer. The mortality in the latter form is variously estimated, but in the former all agree that it is exceedingly high, ranging from 80 to 95 per cent.

The fact that the germ cannot proliferate in the presence of oxygen gives a clue to the class of wounds in which it is likely to exist and their proper local treatment. Punctures or small closed wounds form its favorite nest.

The inference to open up and permit free bleeding from such suspected wounds is plain, for here the germ proliferates and elaborates a most powerful toxin, which, once in the circulating fluids, his peculiar affinity for the cells of the nervous system.

The almost hopeless condition of the patient when the cardinal symptoms of tetanus occur arises is evinced by the numerous methods of treatment advocated. The hope of the profession in combating the acute form of this disease appears to rest upon the early frequent and liberal injection of properly prepared anti-tetanic serum in the subcutaneous space of either the

NEW GAME LAW.

The Audubon Society of St. Louis, through its energetic secretary, has prepared a game law for the coming legislative session. The chief points are as follows:

1. Prohibits the killing, capture, possession or sale—dead or alive—of wild birds, except game birds and a few noxious species.

2. Prohibits the willful destruction of birds' nests and the collecting of birds' eggs.

3. Prohibits the sale of all dead game at all seasons of the year—for a certain period.

There is no agency so well calculated to protect wild bird and animal life as to prohibit its sale. The high price game commands in the markets is a great incentive to its slaughter, and this is the most potent factor, working to its ultimate extinction. Experience has taught that this object is best gauged, and purely in the interest of the masses, and in direct line with the unerring laws of nature, reproduction.

ROD AND GUN

It is not known just what character of bill the Missouri game and fish protective league will draw up to be considered at their next meet. As the matter is now in the hands of the executive committee, which is composed of true sportsmen, there is no doubt but the document will be ably drawn. There should be perfect harmony existing between the M. G. and F. P. L. and the Audubon Society regarding the game laws, as in all other matters where the common good of all is considered. There is no time to waste if the matters are to be properly handled. The Audubon Society is earnestly working throughout the state and interesting thousands of people in behalf of proper game and fish legislation that will be comprehensive and broad enough to protect both fish and game and save the song birds and regulate all matters pertaining to the hunters and anglers' arts. Many candidates for the legislature are being pledged to support the measure when it comes up before the general assembly.

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Good for everything that runs on wheels.
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Made by STANDARD OIL CO.

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WINCHESTER RIFLE AND PISTOL CARTRIDGES

and insist upon getting this time-tried brand. The experience of 30 years, coupled with a modern system of manufacture, makes the Winchester brand of Rifle and Pistol Cartridges better than any other on the market.

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SPRING HILL, TENNESSEE,

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35 Horses of best producing strains in Tennessee. 3 Saddle Stallions, Kentucky bred. 20 Jerseys, representing Golden Lad imported blood crossed on the Queens and Stormer strains of Tennessee. For Catalogue address

OEO. CAMPBELL BROWN or M. C. CAMPBELL, Spring Hill, Tennessee.

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BUCKSKIN BRAND

OF RUBBER BOOTS AND SHOES are made of real rubber—and one pair of them will outwear two pairs of the standard first grades now on the market. Try a pair and be convinced. Made in Duck Boots, Duck rolled edge Ores for Socks, and Boots and in Arctic and light rubber shoes. Insist on getting the BUCKSKIN BRAND. None genuine without the word BUCKSKIN on the top front of the leg of the boots and the bottom of the shoes. If your dealer does not keep them write us and we will send you a very interesting pamphlet, profusely illustrated, which describes the making of Rubber Boots and Shoes from the gathering of the rubber to the finished goods.

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NOT MADE BY A TRUST.

CLOSING OUT SALE OF STANDARD BRED HORSES

at VALLEY GROVE STOCK FARM, Nov. 7th.

Farm 6 Miles North of Walker, Mo.

The offering includes Silver Simmons, 2:16 1/4 (grandson of Simmons, 2:28), Eaglyte 29215 (son of Onward 1411), to be sold privately; 3 mares by Onward 1411, 6 mares by Norval 2:14 3/4, and 15 weanlings, yearlings, 2-year olds and 3-year-olds by Silver Simmons, 2:16 1/4, and Eaglyte, out of those Onward and Norval mares. Transportation furnished to and from farm. Lunch on grounds. For catalogue address

E. T. LETTON & SON,

COL. R. L. HARRIMAN, Auctioneer. WALKER, VERNON CO., MO.

Shoeing Horses

By R. Boylston Hall.

To close out last edition this book is offered at \$1.00. Send orders to author at No. 8 Exchange Place, Room 8, Boston, Mass.

FOR SALE OR EXCHANGE.

For Breeding Cattle—Hartford, Shorthorn, or Polled Angus Cows or Heifers or Shropshire or Hamp-hire Sheep. I want Stallions by Silver and Stranger out of Harry Wilkes mares and a gelding by Direction and drivers and mares, standard bred.

S. S. C. ED. COFFMAN, SULLIVAN, INDIANA.

ROD AND GUN

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Home Circle

Written for the RURAL WORLD.
THE UNCOUCH BOY.

The uncouth boy has come our way,
And he is covered over
With a goodly lot of meadow hay
And sprinklings of sweet clover.
He lives over there
By the side of a hill,
Where the road makes a turn,
And crosses the mill.
His mother is dead,
And his father is in bed—
Sick as a fellow can be—
Of brothers and sisters a dozen there
are—
All of them younger than he.

Of learning—there isn't a bit in his head,
Excepting the lore of the hills;
Of toll—his forever—without a reward,
And plenty, and plenty of bills.
His pleasure is sought
In the pipe he has wrought
From the corn he has raised in the field;
His solace is found
In the woodland around,
Where often, alone, he has knelt,
And this is his life,
And this is his lot,
And never complaint has he,
For he knoweth not
Of a better lot,
Or that such a thing could be.
Southwest Mo. H. L. TERRY.

Written for the RURAL WORLD.
ONE YEAR AS COOK.

Once upon a time, when the question was raised in the family conclave as to who should be the cook for the ensuing year, I, in a moment of mental aberration, "put myself" in the hands of my friends, like the politician. Forthwith I was invested with such titles as "Lord High Oven Tender," "Minister of the Interior," and "Stoker to Her Majesty the Range," no empty titles, as all cooks can testify. I said to the family, "You will be served with no hygienic messes, no water-cure menus, but neither will you get elaborate French confections, as difficult to concoct as their names are to pronounce. I will put no frosted paper pants on the lamb chops, nor do any landscape gardening on the omelets, but will give you wholesome, plain, neat, and simple cooking. I will allow no supplementary chafing-dish musing, nor refrigerator lunching, but your known weaknesses for certain dishes will be respected and indulged at satisfactory intervals. Although you reside inside the Great Pie Belt, you will not get that gastritis-engendering, anarchy-fostering, indigestion-producing, you must come to mess promptly and keep out of the kitchen."

I drew the line at pie because I had made a custard pie once which was a thing to cure with. It had a pneumatic tire, like the confectioner's pies, and was made by rule, but somehow the under crust had aspirations above its sphere and rose up in places until the result resembled a map of the creation with dry land just appearing. The pie tasted better than it looked, as I alone testified. When I received my commission as cook it was in the glad, warm springtime, which also held the promise of a warmer, if not a gladder, summer. I went down and held a private session with the kitchen behind closed doors. I first took out the window screens and stood them away in the basement. Then I went outside and tackled a length of wire-netting over the whole of each window, thus permitting the snakes to be lowered from the tops without, and allowing the heated air to go out, carrying with it all steaming odors. I moved the cooking utensils close to the range and sink, so as to save unnecessary steps, then over by the coolest window I spread a loose length of carpet, and on it placed a big rocking chair, wherein I could sit and read the numerous cook books I never followed. Women who fall to provide themselves with a comfortable chair in the kitchen lose many a chance for a good rest while watching a cake, preparing vegetables or waiting for the kettle to boil.

Incidentally, that same loose length of carpet proved my salvation, for once when I inadvertently backed into the stove and set my clothes afire, I threw myself upon that carpet, folded it about myself and drew it tightly around my neck to keep the flames from climbing to my face, then rolled the blaze out to the floor. When I went upstairs to put on another dress, I found some of my hair heard you scuffling around, but we dared not enter the kitchen without a written permit, and, as you did not call out, we just supposed you were downing some refractory new dish.

I supplemented the usual cooking outfit by a dozen granite ware pans, varying in size from a tiny one-ounce saucepan to a poach an egg or blend a sauce thickening, to the shallow fifteen-inch affair in which I made jam and preserves. These I cooked in the oven, where they could not burn or boil over and required only occasional stirring. In the deeper, middle-sized pan I made my famous peach cobbler. I cooked the peaches thoroughly on top of the stove with plenty of sugar and water, thickening the syrup slightly by throwing into the hot juice, for a few moments only, some well-washed leaves of the rose geranium or the lemon verbena. These gave a delicate flavor that no one recognized.

I kept what I called my "hurry shelf" and on it were the things necessary for a quickly prepared lunch or dinner. With this to fall back upon I opened the door to unexpected company with no misgivings as to what I should feed them. The emergency array included potted soups and meats, bottled shrimps and olives, tinned vegetables and some delicate fruit, fruit or preserves in glass. If this reserve shelf was drawn upon, it was promptly refilled next day. I will frankly admit I cannot get up a good emergency meal, as some cooks apparently can, from one potato and a ham bone, a spoonful of ketchup sauce and a pale, cold apple dumpling.

As necessarily compelled a judicious expenditure of my table allowance I reduced marketing to a science. I retained the same meat dealer, but with the arrogance of a cash customer I promptly refused anything not up to standard.

Having my own horse and phaeton I was independent of the huxter's wagon and the corner market and could go far afield for my supplies. I rigidly avoided the fashionable, high-priced market places, and twice a week I drove to some far-off outside stand in the German or French quarter, where truck-patch tenders unloaded their stock direct from the gardens. It required early rising to avail myself of these fresh wares, for sunrise in summer found the stalls and aisles between the wagons crowded with the thrif-

ty neighboring housewives with their big baskets, and by nine o'clock the place was deserted and with their sleepy drivers nodding on the seats. After these early rides I came home with my baskets overflowing, and arranged my spoils in the laundry sink, where an occasional sprinkling kept things dewy and fresh for several days. Sometimes I drove outside the city to the market gardens themselves and waited while the vegetables were gathered for me, or the grapes snipped from the vines, or while the hens were routed from the nests as fresh eggs were hunted.

I kept my family fairly well satisfied during my year as cook, but candor compels me to admit that it cost me no much from the excellence of my cooking as from the fact that the first one to complain was to take my place.

Scientific economists are, I believe, experimenting on concentrated food stuffs, and can soon offer the world convenient little vest-pocket editions of full meals in tablet shape.

Then, doubtless, our teeth will all fall out from disuse.

ELIZABETH FIELD.

Written for the RURAL WORLD.
MIXED OZARK ITEMS.

Dear Friends of the Home Circle, if it were not for using the much abused subject "weather," I would tell you it was raining to-day; in fact, pouring, and in place of the dust and dry sticks of last year we have mud and rank weeds. A farmer, to be happy, must never be a weather vane, and as the Ozark farmer is shown the benefit to the ground and his feeding value, many more will be induced to give them a trial. I see their plants in corn, sown in orchards and in small patches.

Most farmers are late with wheat sowing, and many sow it in the good old way (?) while others are right up with the times, using the drill and commercial fertilizer. The result remains to be seen. The manufacturing of sorghum molasses is almost through with, and our patch turned out very fair, in gallons and color. Perhaps because cultivated by the children and myself or because it was the orange cane, but it was a success. The oranges are enterprising, and well enough off financially to set out large commercial orchards and do not intend to let them out and treat them to a course of neglect, but will hire a hand especially and for no other business than to take care of these trees. This means much for the future of the Ozark.

If one has a lifetime to spend in getting these farms in good shape for cultivation, land cleared and kept sprouted, stumps taken out, rocks picked off, or a full pocketbook will answer the purpose, and the other fellows can do the work, or there is another alternative, he can buy a farm on which all this hard work has been accomplished, then he can make a good living as easily and with as few drawbacks as in most places.

Schools are open and we are at the mercy of the directors, who, in their turn, are at the mercy of pretty, palavering school teachers. Sometimes we are lucky and get an enterprising wide-awake teacher, and sometimes not. I suppose it is so the world over.

If women grow conceited and think they can run a farm as well as a man just let the head of the family give them a trial, as our did. We give them a week's cool weather for us to put up the stove. We needed new stove pipes, but viewed with dismay the flat piece of tin sent to us, which we were supposed to "line" the pipe, pound together and make our own pipes. My! but it is contrary stuff to handle. We took it to a round fence post, and I heated them, and with a glass lemon squeezer extracted the juice as from lemons, and served it in small glasses.

When I served watermelon it was in a deep glass dish with egg-shaped pieces of the cold red pulp carved out with a large mixing spoon. The big Bermuda onion, which is nearly as mild as a potato when cooked, came in for some of my attention. This I cut into halves, after boiling tender, scooped out the center, and with it mixed a highly seasoned bread crumb dressing, which I returned to the halves and baked until brown. The small onions I boiled and served in a similar manner by setting them in a baking pan and packing around them the seasoned dressing. Around large oysters I pinned paper-thin slices of breakfast bacon with tiny wooden skewers, and laid them in a wire broiler, or, if the fire was smoky, into a pan in the hot oven until the oysters were plump and the bacon clear, and then served them on toast.

I passed off cheap apple jelly on my unsuspecting family as something choice by throwing into the hot juice, for a few moments only, some well-washed leaves of the rose geranium or the lemon verbena. These gave a delicate flavor that no one recognized.

I kept what I called my "hurry shelf" and on it were the things necessary for a quickly prepared lunch or dinner. With this to fall back upon I opened the door to unexpected company with no misgivings as to what I should feed them. The emergency array included potted soups and meats, bottled shrimps and olives, tinned vegetables and some delicate fruit, fruit or preserves in glass. If this reserve shelf was drawn upon, it was promptly refilled next day. I will frankly admit I cannot get up a good emergency meal, as some cooks apparently can, from one potato and a ham bone, a spoonful of ketchup sauce and a pale, cold apple dumpling.

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OLD OCTOBER.

Old October's purr'nigh gone
And the frost is comin' on
Little heavier every day
Like our hearts in that away!
Leaves are changin' over head,
Back from green to gray and red,
Brown and yellow, with the stems
Loosenin' on the oaks and elms;
And the balance of the trees
Gittin' balder every breeze—
Like the heads we're scratchin' on!
Old October's purr'nigh gone.

I love Old October so!
I can't bear to see her go—
Seems to me like losin' some
Old-home relative or chum—
Pears like sort of settin' by
Some old friend 'at sich by sigh
Was a passin' out o' sight
Into everlastin' night!
Hickernuts a feller here,
Rattlin' down is more like tears
Drappin' on the leaves below—
I love Old October so!

Can't tell what it is about
Old October knocks me out—
I sleep well enough at night—
And the blamended appetite
Ever more! man, please make haste
Last thing at it tastes the best!
Warnin', butternuts, pawpaws,
Figs and lingers up my jaws
For real service, such as new
Pork, sparabits, and sausage, too—
Yit, fer all, they's sompin' 'bout
Old October knocks me out!

—James Whitcomb Riley.

Written for the RURAL WORLD.
THE PANCAKE'S REIGN.

Now is not the winter of our discontent,
For the symbol of complete satisfaction
reigns to-day on our breakfast tables.
Swimming in the fragrant autumn-colored
sap of the hard maple tree, the pancake
is a verily made after the gourmet's
own heart. To paint the ily, to breathe
a perfume on the violet or to flavor and
sweeten a plate of maple-syruped pan-
cakes is to dream a dream.

The pancake, even the flapjack if you
please, is an aristocratic morsel, if not
indeed, the autocrat of the breakfast
table. In days of Auld Lang Syne it
was the delicious fragrance has soothed
the weary mind, and has been a source
of comfort on the southern mountains, while
Dr. Ben Franklin, when in gay Paris, en-
veloped his beaming face in vapor of pan-
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ture of the smart set is yet to be won;
but, nevertheless, the new pancake has
played their part, and I confidently expect
to see the future hawk writer's Mail and
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Du Maurier did with the Tribby foot. He
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fast scene where embryo presidents de-
vour the installment offerings of the grid-
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and adulterated ever present upon the
pancake! The rural pancake is the
stuff of which American heroes are made,
and its farm home cafe has for its client-
ele the future genius of our country. The
microbe of greatness and renown lurks in
the aroma of the rural dining room, and
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pancake season. Even a legislature could
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sory flapjack diet.

JOHN ABBOT CLARK.

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IN THE GARDEN.

When we look at the big, careless weed
bowing over the fence to passers-by we
and conclude in passing along and be-
ing so saluted by more thirty one away
from home. This has been a wonderful
year for weeds. Mower, scythe and hoe
have been busy in vain. The maple seed
planted in the spring are as high as the
fence and are to be transplanted into the
yard. They are the white maple, and
must be kept out back to make thick
shade. The sugar maples and elms are
dying, some have been planted for thirty-
five years, a late trimming one spring
ruined the maples. The old oaks and
hickory are dying limb after limb, until
the premises look anything but promising.

A dozen rods for fifty cents, did nicely,
and some bloomed. A geranium started
from seed in early spring in a box and re-
ported, bloomed. The white lilies were
separated in August and bulbs are grow-
ing. Slips from crinomeanders are easily
rooted. A palm five years old started
from seed, very much admired; plenty
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window, in a little room where Jack
Frost has not dared to poke his nose, has
shelves all filled with plants; some are so
thrifty and thankful with their bright
blossoms, others droop and die with the
same attention.

As our yard, orchard and fields are one
continuous stretch without fence, my
greatest trouble is keeping the poultry
from doing damage to the plants in sum-
mer. In a not very inviting back yard,
quite bare from having been filled up
with clay, a flower bed was made in a
corner, reaching from the pantry along
the kitchen to the well, with old screen-
ing tacked to stakes. A fence was made
and all summer it has been bright with
phlox and verbenas of all shades and col-
ors. The men seemed to enjoy it and
often spoke of how pretty it was. So we
never gathered flowers there, and soon
the little folks looked upon it with pride,
occasionally treated it to a cup of water
and went to the garden for bouquets.

The citrons are the largest I have ever
grown. The demand is greater than the
supply, and as there are only two of us
that raised that crop, I fear some of our
friends will not get any. We think the
preserves excellent when made and used
fresh. They will not keep long.
No objection to making preserves, but
cooking is so dislike; would rather be out-
doors. With fruit this year we have not
been "battered," but last summer with
about fifty peach trees there were two
busy beings. The men had no time to
help us. When one of the staff asked if
I was the one that had so many peaches
I pleaded ignorance, having just read of
the miles of trees in Missouri and our in-
significant crop in comparison.
St. Clair Co., Ill. MARTHA.

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day's eggs and the second day's eggs. On
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ing, and the egg was longer, more pointed
and slightly heavier than the one laid on
the second day, the latter being laid about
noon or just after. Moreover, when I
placed several of the same kind together
they matched to a nicety. "Now," I
thought, "I have got it. The large point-
ed egg will surely hatch out a cockerel,
and the round, plump one a pullet." I
immediately mated up the hen with a
suitable bird, and tried a small sitting of
afternoon eggs. In the chickens I had
both cockerels and pullets, the former
predominating. I think I was right when
I concluded that, far as the egg itself
it would enable a man to distin-
guish its sex, either by the air cell or by
the shape of the egg; but that sex was
determined by other causes.

(4) I now sought about for some theory
which might account for the varying
numbers of the two sexes noticeable in
every brood of chickens. I think I have
found one, and when I have reduced the
theory to more of a certainty I will write
further upon the matter. The theory is
this—that the sex is determined at the
time of sexual contact; that there are two
elements or forces which unite, positive
from the male and a negative from the
female; that where the positive element
or force is predominant a male will be the
result, and vice versa. I have made some
progress in the matter already; for in-
stance, I mated in April a very vigorous
cockerel with two hens which had laid
remarkably well this winter. My object
in doing this was to try and breed cock-
erels. I did not want them, but I wanted
to see the result. The cockerel was re-
sted before he was put into the pen, and
well fed. The hens had worked hard for
some months, and I concluded they must
surely be weakened by it. Thus I ob-
tained a condition of things which pointed
to a large preponderance of the positive
element over the negative. The result was
that I obtained about eighty per cent of
cockerels.

I have also tried the opposite to this.
I put six pullets, in the pink of condition,
into a pen by themselves, and then each
afternoon I placed among them a cock
two years old, which all the rest of the
time was running with about forty hens.
Here I thought I had a preponderance of
the negative element. So far this has pro-
duced something like eighty per cent of
pullets. I am hoping that shortly I may
be able to give exact numbers, when as I
have just said, I will write again.

In my next experiments I mean to set
eggs which have not only been fertilized
on an overworked cockerel, but the cockerel
himself will only be allowed access on
glorious days, so that I can avoid the ex-
hausting effects of a warm spring day
upon his temperament. Even then I hard-
ly expect to hatch 90 per cent of pullets,
as other small circumstances may arise
which will turn the scale one way or the
other.

KEEP THE PULLETS.

Prices of eggs hold up well and there
is no reason why they should be lower
till next spring, even if they are then—
in fact, there is every indication that
they will be higher right along, says
"Farmers' Voice." Every keeper of hens,
whether a small flock or a large number,
ought to plan to reap a harvest from this
fact.

The first thing to do is to help the
moulting hens to get their new dress on
just as soon as possible; give them good
quarters at night and a chance to get
to such during the day should it rain;
feed liberally with a variety of food, in-
cluding some linseed meal, sunflower seed
or green cut corn. The next thing to do
is to keep all the likely pullets.

Do not be led into selling a single pul-
let just because the prices for spring
chickens are good. A pullet well fed from
now on will gain in flesh or weight till
she begins to lay, then for a while her
keeping is at a daily profit.

